

RENEWABLE RESOURCES AND REGIONAL GOVERNANCE:  
POLICY IMPLEMENTATION AND NEGOTIATION OF AUTHORITY  
IN WESTERN ELECTRICITY MARKETS

by

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DEDICATION

To Luci and Elise

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## ABSTRACT

In response to energy policies and technological innovation, electricity systems are becoming more integrated and interdependent. In the Western United States, the creation of an energy imbalance market (EIM) is a significant move towards electricity grid integration. The question of how to govern this newly forming market has been deliberated in multiple decision-making venues. Through these deliberations, stakeholders engaged in the process of policy implementation and shaped the structure of the EIM as a policy intervention. To understand how this initiative unfolded and why this effort succeeded where others failed, this research explores policy implementation as the outcome of the social negotiation of authority. To accomplish this, this research combines policy implementation, boundary work, and field theories and develops an empirical investigation of how actors reconciled multiple and often conflicting authorities to enact policy change. This study asks how actors, using social practices and strategies, created and legitimated sources of authority to establish a governing body for this new market service. This case study relied on qualitative methods, including document review, participant interviews, systematic observation of decision-making in context, detailed observation fieldnotes, and the self-reflexive awareness of the role of the researcher. The dissertation demonstrates that: 1) dominant yet deficient narratives provided a rationale for ongoing resistance to regional governance in the West and prevented collaboration; 2) actors overcame and transformed deficient sources of authority by enacting social strategies that allowed alternative interpretations of the EIM construct and enabled

organizations to begin collaboration; 3) actors using social negotiation interpreted and adjusted the EIM policy intervention and co-created emergent forms of authority that are flexible and dynamic; and 4) field interdependencies surfaced taken-for-granted assumptions and provided critical resources for innovative forms of collective action. The implications of these findings highlight the importance of the social negotiation of authority in energy policy implementation. Specifically, the research makes several theoretical and practical contributions: 1) multi-organizational policy implementation is a social process of transforming, negotiating, and co-creating authority, and relational authority can be an important rationale for enacted practices; 2) strategic actors engage in communicative and social processes in which authority is emergent and abstraction enables collective action without requiring consensus; 3) routine field interdependencies can bring attention to taken-for-granted assumptions and create a moment of co-authoring; and 4) regional electricity system governance structures evolve as they balance the inherent tensions of organized market participation.

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## LIST OF ABBREVIATIONS

CAISO	California Independent System Operator
EIM	Energy Imbalance Market
ERCOT	Electric Reliability Council of Texas
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse Gas
ISO-NE	Independent System Operator of New England
MISO	Midcontinent Independent System Operator
NYISO	New York Independent System Operator
PMA	Power Marketing Administration
PJM	PJM Interconnection
RPS	Renewable Portfolio Standard
RSO	Regional System Operator
RTO	Regional Transmission Organization
SCED	Security Constrained Economic Dispatch
SPP	Southwest Power Pool
WECC	Western Electricity Coordinating Council

## CHAPTER ONE: INTRODUCTION

Electricity systems around the world are becoming more integrated and interdependent. Complex networks of infrastructure, markets, and regional governance manage systems that provide real-time balancing of electricity supply and demand. In most of North America, Regional Transmission Organizations (RTOs) manage the wholesale electricity system. However, the electricity system in the Western United States has remained relatively decentralized (Borenstein & Bushnell, 2015).

The seating of the Energy Imbalance Market Governing Body in the summer of 2016 marked a significant move towards electricity grid integration in the West. The energy imbalance market (EIM) is the first successful extension of organized electricity markets in the Western United States beyond California. The EIM differs from other organized markets in two important ways. It is limited to real-time transactions and does not include the forward and ancillary services markets or many of the other coordinated functions that are used by RTOs. Additionally, the EIM emerged after the recent growth of renewable resources transformed the resource mix and operating constraints of the electricity system, whereas other organized markets originated primarily from pressures to improve system reliability and efficiency.

To understand how this initiative unfolded and why this effort succeeded, while previous efforts to introduce organized markets failed, my proposed research began with an interest in three empirically linked questions: 1) Who were the actors that participated

in the negotiation of EIM development? 2) How did non-market participants, like public interest stakeholders and state regulators, engage in the debate? 3) How are the interests of diverse stakeholders reflected in the EIM governance structure? These questions emerged as a more specific way of exploring the overarching paradox of why stakeholders in the Western Interconnection created an EIM, when fully organized markets and regional governance provide greater economic efficiencies and more operational flexibility.

### **1.1. Western Energy System Infrastructures**

The tension over organized markets and regional governance in the West has existed since 1996, when the Federal Energy Regulatory Commission (FERC) authorized independent system operators (ISOs) and later, regional transmission organizations (RTOs) as voluntary organizations to ensure open access to the transmission grid.<sup>1</sup> RTOs conduct infrastructure planning, ensure system reliability, centrally and dynamically dispatch generation, and operate wholesale energy markets. As the electricity system has become more integrated and interdependent, RTOs improved reliability and economic efficiency by increasing data sharing, communication, and transparency and by identifying and dispatching least cost resources (Hogan, 2002, 2014).

The California Independent System Operator (CAISO) is a nonprofit public benefits corporation authorized in 1996 through California state statute and FERC tariff. CAISO is the largest balancing authority and the only FERC-authorized RTO in the interconnected electricity system in the Western United States. In the rest of the U.S.

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<sup>1</sup> For the purposes of this paper I will use RTOs to denote both RTOs and ISOs.

Western Interconnection, 33 balancing authorities are responsible for matching supply and demand in real-time and coordinating with each other for infrastructure planning and flexible reserves. These balancing authorities do not have organized electricity markets, but instead rely on a combination of short-term and long-term bilateral contracts. Despite multiple attempts to extend or create new organized markets, the Western Interconnection has, until recently, resisted these efforts, and continued to operate with a decentralized decision-making and coordination structure.

Since RTOs were first established in the late 1990s and early 2000s, wind and solar resources have transitioned from emerging technologies to major wholesale electricity resources in many regions. In the West, state policies encouraging renewable resources, coupled with decreasing costs of renewable technologies, have expanded the share of these resources in the overall resources mix to more than 12%, and the West has a larger share of solar resources than any region except Hawaii (U.S. Energy Information Agency, 2017). Consequently, increasing attention is now being focused on how to integrate these resources into the electricity system, while maintaining reliability and affordability (National Renewable Energy Laboratory, 2015; Western Electricity Coordinating Council, 2011).

Wind and solar resources are more variable than conventional resources and require the electricity system to be more flexible and dynamic. Because electricity is expensive to store, the grid precisely matches supply and demand in real time. As demand increases or decreases, resources are dispatched up or down. Electricity system infrastructure, rules, and processes were designed around relatively predictable and controllable resources, like coal and nuclear. Therefore, integrating high levels of

variable wind and solar resources creates a need for other resources to ramp up and down more quickly, creates shorter peaks for cost recovery by conventional resources, and can lead to negative prices and curtailment of wind and solar resources that would otherwise be available to meet clean energy policy goals. This affects investment opportunities and the value of existing assets. Maintaining reliability, maximizing the economic efficiency of a new resource mix, and achieving progress toward clean energy goals requires technological, institutional, and policy change to overcome the inflexibility of the legacy electricity system. Utilities, regulators, RTOs and other stakeholders are exploring a range of policy implementation options to enact such changes. For example, electricity system flexibility can be increased through forecasting, sub-hourly economic dispatch, distributed energy resources, energy storage, flexible generation, transmission, and regional coordination. These options require implementation of technological solutions, but they also all require implementation of new policy. RTO decisions about which options to pursue and the details of how implementation occurs, will shape the relative value of different resources, the location of infrastructure, and the incentives for developing new technologies at scale.

Originated to provide efficiency and reliability benefits, RTOs are now playing a critical role in integrating variable wind and solar resources into the electricity system and creating market pathways for technological innovations such as storage, demand response, and other distributed energy resources (Cifor, Denholm, Ela, Hodge, & Reed, 2015; Cochran et al., 2013; Dworkin, Sidortsov, & Sovacool, 2013; Mai, Sandor, Wiser, & Schneider, 2012; Moot, 2014). Relative to the decentralized decision-making structures in the West, RTOs provide geographic and resource diversity that helps

balance the variability of wind and solar, greater access to flexible reserves, coordinated infrastructure planning to bring renewable resources to distant load centers, market signals to encourage investment in new technologies, and more operational awareness and flexibility.

Despite these economic and reliability benefits of RTOs, stakeholders in the West did not form a Western RTO, but instead decided to create an EIM that extends CAISO real-time market services to participating balancing authorities. The EIM allows the economic dispatch of resources in 15 minute and 5-minute market intervals, but does not allow balancing authorities to participate in the forward energy market (i.e., the day ahead and hour ahead markets) or the ancillary services markets. Participating in the EIM is voluntary and the choice to participate is made by individual balancing authorities that maintain autonomy from FERC rate regulation and responsibility for reserve obligations. To date, six investor-owned utilities with operations in seven states, other than California, have decided to participate in the Western EIM.

## **1.2. Policy Implementation**

RTOs sit at the interface of federal, state, and local regulation. RTO operating protocols, market designs, and planning procedures comprise the complex processes of change and methods of coordination that translate policy inputs into outcomes. In other words, the outcomes of state policy initiatives, like renewable portfolio standards (RPS) or affordability goals, are shaped by the policy implementation decisions of RTOs and the numerous stakeholders that engage in organized wholesale power markets and determine the amount, value, and location of electricity resources.

Implementation of the EIM involved formal and informal conversations among a broad range of stakeholders including CAISO, investor-owned utilities, municipal power agencies and electric cooperatives, federal power marketing administrations, independent power producers, other asset owners, private power marketers, state and federal regulators, energy policy offices, and environmental advocates. The question of how to govern the newly forming market was deliberated in multiple decision-making venues including formal stakeholder engagement processes and a committee facilitated by CAISO. Through these deliberations, stakeholders engaged in the *process* of policy implementation and shaped the structure of the EIM as a policy intervention.

This dissertation takes up questions of policy implementation, political control, and democratic accountability through the lens of social negotiation of authority. In particular, my research asks how RTO stakeholders negotiated multiple and conflicting sources of authority to legitimate certain actions. In broad terms, I am interested in understanding how actors within policy implementation systems reconcile ambiguous and often conflicting authorities to produce change and pursue collective interests. This process is central to understanding how state organizations within governance systems seek to exercise discretion and sustain accountability to the public interest.

### **1.3. Rationale**

The rationale for this research is two-fold. First, the Western EIM initiative is a rich case of evolving electricity system governance and provides a unique opportunity to study policy implementation and interorganizational collaboration as they unfold in practice. By studying a complex governance system that requires interorganizational collaboration, this research seeks to provide insight into the social mechanisms that shape

implementation processes and outcomes. In particular, this research is focused on examining the social negotiation of authority, how strategic actors engage in these social negotiations, and how interdependencies and external events influence social negotiations.

Much of the policy literature highlights the importance of understanding implementation through the causal relationships between processes, outcomes and the formal and informal authorities that form through centralized organizations and local contexts (Bardach, 1977; Barrett & Fudge, 1981; Hill & Hupe, 2014; Matland, 1995; Pressman & Wildavsky, 1973; Sabatier & Mazmanian, 1980; Schneider & Ingram, 1990). However, the interdependent and dynamic nature of electricity policy implementation requires action by multiple organizations engaging at different levels and within a context of multiple and often conflicting sources of authority (Goldthau, 2014). Understanding policy implementation in these complex systems requires a framework that also incorporates the social process of reconciling different sources of authority in order to explain how and why things get done in a particular way. The understanding of authority as a negotiated phenomenon is well established in field theory and organizational communication literature (e.g., Fligstein & McAdam, 2012; Taylor & Van Every, 2014) and is being explored in policy implementation literature (Moulton & Sandfort, 2017). This dissertation seeks to extend these ideas to the context of multi-organizational regulatory policy implementation and to provide empirical evidence of the process.

Second, the EIM initiative is of interest because it is fundamentally changing the decision-making processes and relative influence of stakeholders in the West. The

decisions about how to structure EIM governance will shape the region's response to climate change and the distribution of benefits and burdens across the region for years to come. RTOs and their governance structures are increasingly important, yet understudied, policy environments. Aligning federal organized power markets with state policy initiatives is a critical energy policy challenge. It has been the subject of multiple FERC technical conferences, legal challenges, and Supreme Court decisions (e.g., *Hughes v. Talen Energy Marketing*, 2016; *FERC v. Electric Power Supply Association et al.*, 2016; FERC Technical Conference: State Policies and Wholesale Markets Operated by ISO New England Inc., New York Independent System Operator, Inc., and PJM Interconnection, L.L.C. May, 2017). This dissertation seeks to provide insight into how RTO governance structures are evolving, the nature of the interface between state and federal regulators, and how energy policy implementation can be facilitated.

Chapter 2 provides additional background on the electricity system in the West, the growth of renewable resources, and explains the case study presented in this dissertation. Chapter 3 reviews policy implementation literature and connects it to field theory and boundary work literature to help make sense of policy implementation that spans the responsibilities of more than one organization as the social negotiation of authority. Chapter 4 explains the methodology used to collect and analyze data. Chapters 5 and 6 provide the findings from the analysis and Chapter 7 discusses the findings and the practical and theoretical implications of this research.

## CHAPTER TWO: BACKGROUND AND CASE

In recent years, many researchers have been interested in the shift in patterns and styles of governing to include multi-actor and multi-layered networks (Hill & Hupe, 2014; Lynn, Heinrich, & Hill, 2001; Meier & O'Toole, 2006; Moran, Rein, & Goodin, 2006). This shift has led to governance systems that are less hierarchical and more dependent on coordination and cooperation. To better understand how change occurs within these complex systems, scholars have called for policy implementation research to go beyond descriptions of context and process to investigating the complex social mechanisms that explain why things are done in a particular way (DeLeon & DeLeon, 2002; Moulton & Sandfort, 2017; O'Toole, 2004). To answer that call, I am interested in understanding how stakeholders, within bounded policy implementation systems, dynamically produce and reproduce rules and resources to reconcile conflicting authorities and pursue collective interests. This process is central to understanding how organizations within governance systems seek to exercise discretion and sustain accountability to the public interest.

To further my driving interest, this study focuses on a specific intervention, the expansion of organized electricity market services in the West, and how stakeholders created and legitimated sources of authority to establish a Governing Body for this new market service. This chapter provides the background and case description for the study.

Wind and solar resources now account for an important share of capacity and net generation in many western states (U.S. Department of Energy, 2016). Consequently, increasing attention is being focused on how to integrate these variable resources into the electricity system, while maintaining reliability and affordability. Recent research demonstrates that high levels of wind and solar can be integrated with existing technologies, but this transition will require institutional and policy change. This presents a critical challenge for the West. Wind and solar integration can be facilitated by the automation, expanded communication, and regional scale provided by regional transmission organizations (RTOs). However, outside of the California Independent System Operator (CAISO), the West has long resisted the tight regionalization and organized markets of RTOs. The barriers to organized markets include concerns about retaining political control, maintaining affordability, and cultural differences. This history of resistance makes the decision in early 2013 to create a Western Energy Imbalance Market (EIM) a rich case of evolving electricity system governance and a unique opportunity to study multi-organizational policy implementation in practice. The EIM initiative is fundamentally changing the decision-making processes, relative influence of stakeholders, and energy federalism in the West.

This chapter describes the energy resources, electricity system infrastructures, and legal authority that provide context for the EIM initiative. First, the chapter highlights the growth of wind and solar resources in the West and the challenges of integrating these resources into conventional infrastructures. Second, it describes the two distinct electricity system infrastructures in the West. Third, the chapter explains the federal authorization of RTOs. Finally, the chapter describes the implementation of an innovative

EIM mechanism that leverages the CAISO infrastructure and the initial steps toward the creation of a Western Regional System Operator (RSO).

## **2.1. Pressure to Integrate Wind and Solar Resources**

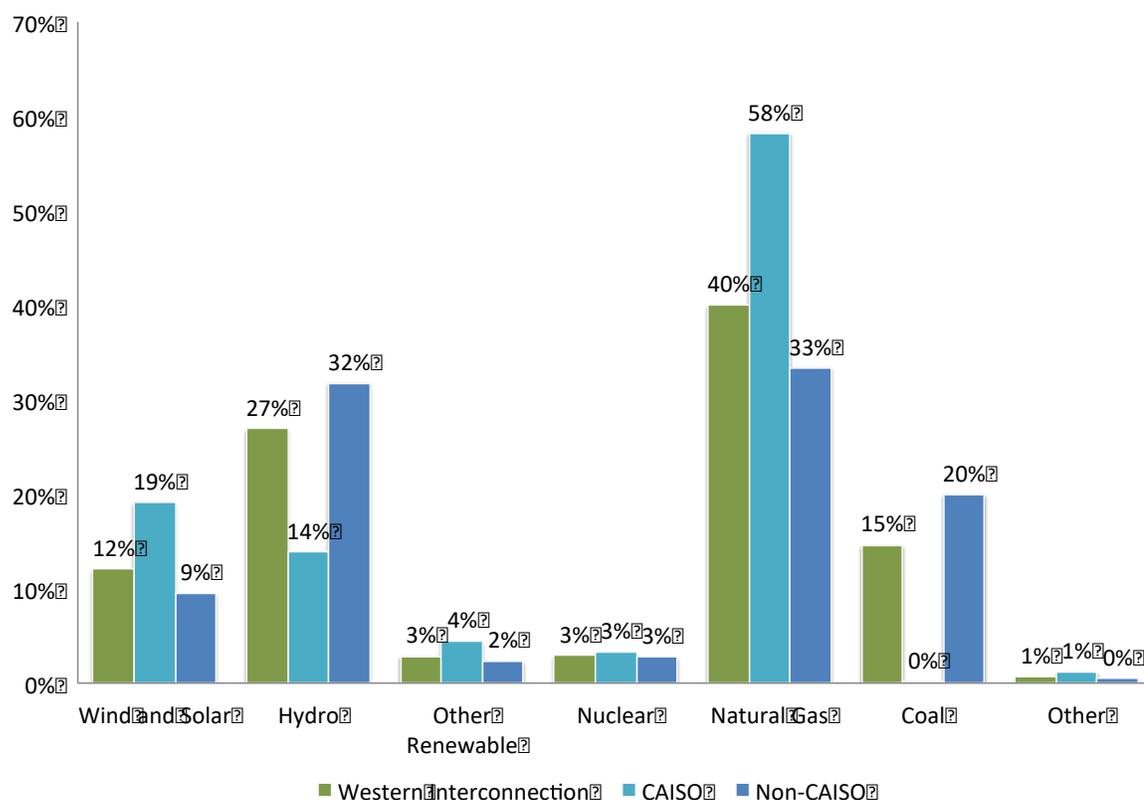
Since RTOs were first established in the late 1990s and early 2000s, wind and solar resources have transitioned from emerging technologies to become major resources for wholesale electricity deployed at utility scale in many regions. This section describes the growth of wind and solar resources in the West and the challenges of integrating these resources into conventional infrastructures.

### Growth of Wind and Solar in the West

In the West, state policies encouraging renewable resources, coupled with decreasing costs of renewable technologies and institutional innovations, have expanded the share of wind and solar in the overall resources mix. In the U.S., wind and solar capacity increased from 7,200 MW to more than 101,000 MW between 2004 and 2015 and grew as a share of total capacity from 0.7% to more than 9% (U.S. Department of Energy, 2015, 2016). In comparison, wind and solar capacity in the CAISO footprint is now more than 13,600 MW, accounting for approximately 19% of total installed capacity. In the non-RTO portion of the Western Interconnection, wind and solar capacity exceeds 18,400 MW, accounting for approximately 9% of total capacity (Figure 2.1).

In addition to growth in capacity, wind and solar now account for 7% of annual net generation in the U.S. and more than 12% of annual net generation in the U.S. Western Interconnection (U.S. Energy Information Agency, 2017). In comparing electricity regions, only the Upper Midwest, Hawaii, and Texas have a higher total share of generation from wind and solar resources, and only Hawaii has a higher share of solar

generation (U.S. Energy Information Agency, 2017). Given this growth in both capacity and generation, increasing attention is now being focused on how to integrate wind and solar into the electricity system, while maintaining reliability and affordability (National Renewable Energy Laboratory, 2015; National Renewable Energy Laboratory & Economics+Environmental Economics, 2015; Western Electricity Coordinating Council, 2011).



**Figure 2.1. Comparison of Resources Mix<sup>1</sup>**

*Wind and solar are a more significant share of total net capacity in CAISO, than in the remaining regions of the Western Interconnection.*

1. Western Interconnection data includes the 37 balancing authorities in North America.  
Source: Data from California Independent System Operator, n.d.-a; Western Electricity Coordinating Council, 2016

### Integration Challenges

The electricity system infrastructures in the West were designed around predictable and controllable conventional resources, like coal, natural gas, and nuclear. However, the level of wind and solar generation that now exists in the West requires more flexibility in electricity system operations, planning, and markets. Wind and solar resources pose certain challenges due to the variability of their generation coupled with limitations in technology. Specifically, systems that are integrating high levels of variable resources need generation that can rapidly ramp supply up or down as wind and solar generation fluctuates. Systems can also face the potential for overgeneration when the combination of available wind, solar, and conventional resources exceed demand. CAISO is projecting significant overgeneration and ramping constraints driven by variable resources (California Independent System Operator, 2013d) and as an example of pressure in other regions of the West, the Bonneville Power Administration has already experienced overgeneration constraints during certain periods with both high wind and high water resources (Duane & Griffith, 2013). Ramping and overgeneration constraints can challenge reliability and affect economic efficiency.

These challenges can be addressed with existing technologies, but require infrastructure and policy change (see E3 Advisory Panel, 2014; Mai et al., 2012; National Renewable Energy Laboratory & Economics+Environmental Economics, 2015). For example, a National Renewable Energy Laboratory analysis found that:

...renewable electricity generation from technologies that are commercially available today, in combination with a more flexible electric system, is more than adequate to supply 80% of U.S. electricity generation in 2050 while meeting electricity demand on an hourly basis in every region of the United States (Mai et al., 2012).

As explained by NREL, integrating high levels of renewable resources requires policy changes to enable system flexibility. However, creating a more flexible electric system is a difficult challenge in practice. To avoid ramping constraints, overgeneration and electricity system failures, grid operators have traditionally relied on flexible reserves or curtailed generation to remove the electricity from the system. However, the growth of energy from wind and solar has shifted the implications of these practices. For example, during periods of high wind or solar generation, wholesale electricity prices for all resources can be negative and low-cost, clean wind and solar resources can be curtailed (shut down) in order to maintain reliability. This creates operational challenges and affects economic efficiency, the value of wind and solar investments, cost recovery for conventional resources, and progress toward clean energy goals (Stafford & Wilson, 2016).

Alternative approaches that improve electricity system flexibility, economic efficiency, and the integration of renewable resources include sub-hourly scheduling and dispatch, advances in forecasting, new transmission, economic dispatch of renewables, flexible gas generation, time-of-use pricing, new technologies like storage and demand response, and coordination across larger operating areas (Cochran, Denholm, Speer, & Miller, 2015; Loutan et al., 2007; Piwko, Clark, Freeman, Jordan, & Miller, 2010). Many of these alternative approaches require or can be facilitated by the improved automation, data sharing, expanded communication, and regional scale provided by RTOs. However, much of the West lacks the tight regionalization and organized markets of RTOs.

## 2.2. Electricity System Infrastructures in the West

In the late 1990s, efforts to promote electricity system restructuring began to transform the relationships between regulators and utilities. Through a series of orders, the Federal Energy Regulatory Commission (FERC) encouraged the formation of RTOs to manage transmission and oversee wholesale power markets. Additionally, many state restructuring efforts introduced generation and retail competition for electricity.

Across the United States, RTOs formed in seven regions and these organizations now manage approximately 70% of the bulk power supply (U.S. Energy Information Agency, 2013). In contrast, the West has largely resisted this transition to organized markets and regional governance through RTOs. The California Independent System Operator (CAISO) is the only RTO operating in the U.S. segment of the Western Interconnection. Although originally envisioned as a pathway to a west-wide RTO, this expansion has not yet materialized and multiple efforts to form another western RTO have failed.<sup>2</sup> Consequently, in the West electricity transmission infrastructures are managed within two distinct paradigms: areas managed by an RTO and areas managed through coordination among separate balancing authorities. This section describes each of these paradigms in more detail.

### A Single State Regional Transmission Organization

CAISO organized in 1996 as one of the first RTOs. It is the largest balancing authority in the U.S. portion of the Western Interconnection. Balancing authorities are responsible for operating a portion of the grid and matching supply and demand in real

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<sup>2</sup> Including Desert STAR in the southwest and IndeGo, RTO West, and Grid West in the Northwest.

time. Most are either RTOs or electric utilities and most serve more than one utility. As both an RTO and a balancing authority, CAISO provides organized market services, coordinates transmission infrastructure planning, maintains reliable operations, ensures open-access to transmission, and manages the flow of electricity for about 80% of California and a small part of Nevada (Figure 2.2).



**Figure 2.2. CAISO is the Only RTO in the U.S. Western Interconnection**  
*CAISO manages the flow of electricity for about 80% of California and a small part of Nevada.*

Source: Federal Energy Regulatory Commission, n.d.-a

Like other RTOs, CAISO does not own generation or transmission; rather transmission owners relinquish operational control and allow CAISO to control their assets. CAISO administers organized electricity markets in which generation resources are cost-optimized subject to operating and reliability constraints and dispatched jointly.<sup>3</sup>

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<sup>3</sup> Dispatching refers to the operating control of an integrated electric system involving operations such as (1) the assignment of load to specific generating stations and other sources of supply to effect the most economical supply as the total or the significant area loads rise or fall (2) the control of operations and

This method of centrally determining which generation is used is known as security-constrained economic dispatch (SCED) (Blumsack, 2007). The CAISO market framework includes three interdependent organized markets: a day-ahead market based on forecast demand, a real-time market used to address imbalances not covered in the day-ahead market, and an ancillary services market for products that help maintain grid stability and reliability. The real-time market centrally and automatically dispatches power every 15 minutes and every 5 minutes. This basic market model for organized electricity markets is used across most RTOs. While this approach is not without challenges, it generally has served to improve reliability and economic efficiency by increasing data sharing, communication, and transparency and by identifying and dispatching least cost resources (Blumsack, 2007; Hogan, 2002, 2014).

#### The Non-RTO Regions of the West

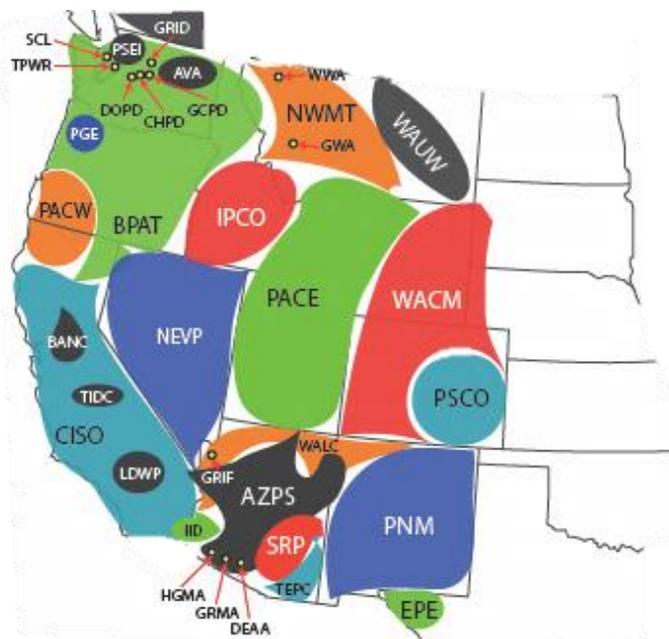
Outside of CAISO, 33 separate balancing authorities manage the transmission of electricity in the U.S. segment of the Western Interconnection (Figure 2.3).<sup>4</sup> These balancing authorities are significantly smaller than CAISO in terms of managed electricity supply. While CAISO manages more than 30% of electric supply in the U.S. Western Interconnection, the Bonneville Power Administration, PacifiCorp West, PacifiCorp East, and Nevada Energy each manage between 6% and 7% of electric

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maintenance of high-voltage lines, substations, and equipment; (3) the operation of principal tie lines and switching; (4) the scheduling of energy transactions with connecting electric utilities (U.S. Energy Information Agency, n.d.)

<sup>4</sup> The Western Interconnection includes 37 balancing authorities: CAISO, 33 other balancing authorities in the U.S., two balancing authorities in Canada, and one in Mexico.

supply. All authorities of the electric Western (Table 2.1).



other balancing authorities manage 5% or less supply in the Interconnection

**Figure 2.3. Balancing Authorities in the West<sup>1</sup>**  
*In the U.S. portion of the Western Interconnection, 34 balancing authorities manage the bulk transmission grid for all or part of 14 states.*

1. See Appendix A for legend identifying each balancing authority.  
 Source: Adapted from Western Electricity Coordinating Council, n.d.

**Table 2.1. Size of Balancing Authorities in the West (2014 data)**

U.S. Western Interconnection		
Balancing Authorities	Sales (Annual Gigawatt Hours)	Share of Sales
<b>TOTAL</b>	<b>776,336,511</b>	

California Independent System Operator	247,685,664	32%
Bonneville Power Administration	54,576,108	7%
PacifiCorp West	49,538,710	6%
Nevada Energy	47,766,286	6%
PacifiCorp East	43,626,329	6%
Other Balancing Authorities	333,143,414	43%
Source: Data from Form 861 (U.S. Energy Information Agency, 2014)		

In the non-RTO regions of the West, power trading, planning, and reliability are managed through decentralized institutions and decision-making processes. For example, the Western Electricity Coordinating Council (WECC) serves as an umbrella organization over five voluntary groups of utilities that coordinate transmission planning in the West and it oversees compliance with mandatory reliability standards.<sup>5</sup> Additionally, several sub-regional organizations, such as the Northwest Power Pool, the Western Systems Power Pool, and the Committee on Regional Electric Power Cooperation, act as voluntary organizations to facilitate regional coordination on certain aspects of power trading, operations, and reliability.

In non-RTO regions, entities trade wholesale power through a combination of self-scheduled generation and bilateral contracts or brokerage agreements that range in terms from hourly to multi-year. Bilateral transactions can also occur in CAISO regions, subject to CAISO rules. Under this market construct, transmission congestion is managed through the purchase of physical transmission rights and actions of the transmission owner (Blumsack, 2007). Compared to the CAISO organized markets, data sharing,

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<sup>5</sup> The Energy Policy Act of 2005 established Section 215 of the Federal Power Act requiring compliance with mandatory reliability standards. FERC certified the North American Electric Reliability Corporation (NERC), a non-profit organization, was certified to carry out these responsibilities and NERC has delegated the authority to create, monitor and enforce these standards in the Western Interconnection to the Western Electricity Coordinating Council.

communication, reliability, and transparency between balancing authorities is fragmented, and consequently, these balancing authorities are less operationally flexible than CAISO.<sup>6</sup>

### **2.3. Federal Authorization of Regional Transmission Organizations**

RTOs are relatively new organizations that are formed by voluntary market participants, defined by technological system boundaries, and span political jurisdictional boundaries. They are authorized by the Federal Energy Regulatory Commission (FERC) under the Federal Power Act of 1935 and are central to energy policy implementation. This section describes the relationship between RTOs and state and federal authority for electricity rate regulation.

The Federal Power Act established a division of authority over rate regulation between federal and state agencies. FERC was responsible for interstate electricity sales, whereas state and local regulators were responsible for intrastate electricity sales. Because utilities typically had few interstate sales, FERC responsibilities were limited. State and local agencies were the primary electricity regulators responsible for protecting the public interest (Lyons, 2014). However, electricity industry restructuring has transformed this division between federal and state authority.

In the late 1990s, FERC required utilities to provide open, non-discriminatory access to transmission customers and encouraged the formation of RTOs to manage

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<sup>6</sup> In 2014, two important actions were taken to improve economic efficiency and reliability. FERC issued Order 764 requiring intra-hourly transmission scheduling to reduce barriers to integrating variable resources and other market inefficiencies. However, liquidity in these markets has been limited. Additionally, NERC authorized the bifurcation of the Western Electricity Coordinating Council leading to the founding of Peak Reliability to serve as a reliability coordinator for the Western Interconnection with responsibilities to provide situational awareness and real-time monitoring.

transmission and oversee wholesale electricity markets (Federal Energy Regulatory Commission, 1996a, 1996b, 2000).<sup>7</sup> As a result, all independent power producers, including renewable energy generators, can purchase transmission services at the same rate that the utility charges itself and utilities can voluntarily chose to participate in organized wholesale electricity markets managed by RTOs.

RTOs and electricity industry restructuring complicate the distinction between federal, state, and local regulatory responsibilities (Table 2.2). FERC Order 888, which required open access to the transmission grid, and subsequent interpretations and clarifications have established FERC authority over all investor-owned utility transactions made through the interconnected interstate transmission grid (Greenfield, 2010).<sup>8</sup> Thus, investor-owned utilities are subject to FERC regulation of transmission and wholesale electricity rates and state regulation of distribution and retail electricity rates.

**Table 2.2. Regulatory Authority by Type of Utility and Region**

	CAISO <sup>1</sup>	Non-RTO
Investor-Owned Utility	State FERC	State FERC
Publicly Owned Utility <sup>2</sup>	Local <i>FERC</i> <sup>3</sup>	Local <sup>4</sup>
1. CAISO itself is a regulated utility as defined in the Federal Power Act and operates through an		

<sup>7</sup> FERC Order 888 reinterpreted provisions in the Federal Power Act to require FERC-jurisdictional utilities to provide open, non-discriminatory access to transmission customers (Eisen, 2016; Federal Energy Regulatory Commission, 1996a; Lyons, 2014). Additionally, Order 888 encourages, but does not require, the formation of independent system operators (ISOs) to manage transmission and oversee wholesale power markets. Subsequently, FERC Order 2000 further defined the requirements for an entity to qualify as an ISO or RTO (Federal Energy Regulatory Commission, 2000).

<sup>8</sup> To implement this requirement, Order 888 requires all jurisdictional utilities to file a *pro forma* open-access transmission tariff (OATT) that contains minimum terms and conditions of non-discriminatory access. Thus, all investor owned utilities are subject to FERC regulation through OATTs. In contrast, government agencies, certain electric cooperatives, and federal power marketing administrations are not universally required to file OATTs (Eisen, 2016).

- open-access transmission tariff. CAISO is also subject to a California state organic statute.
2. Publicly-owned utility (POU) for the purposes of this study include government agencies, certain electric cooperatives, and federal power marketing administrations. This definition departs from the formal definition in the Federal Power Act.
  3. FERC has authority to review a non-jurisdictional utility's rates if they are a component of an RTO's rate design (*Pac. Gas & Elec. Co. v. FERC*, 306 F.3d 1112, 1114 (D.C. Cir. 2002) *Transmission Agency of N. Cal. v. FERC*, 495 F.3d 663, at 671-72 (D.C. Cir. 2007)).
  4. FERC authority over POUs is limited to compliance with mandatory reliability standards and controls to prevent market manipulation (FPA 215 (16 USC 824o) FPA 222 (16 USC 824v)).

In contrast, government agencies, certain electric cooperatives, and federal power marketing administrations are generally exempt from federal rate regulation.<sup>9</sup> These types of utilities are often referred to as *non-jurisdictional utilities* and for the purposes of this study will be referred to as *publicly owned utilities*. Local agencies and boards of directors regulate transmission, distribution, and all sales for municipal utilities and electric cooperatives.<sup>10</sup> However, a publicly owned utility that voluntarily chooses to participate in an RTO is subject to full rate review by FERC. Thus, for publicly owned utilities, joining an RTO involves relinquishing autonomy over rate regulation.

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<sup>9</sup> The Federal Power Act uses the term 'public utility' in a manner that departs from common usage. The Act defines a public utility as "any person who owns or operates facilities subject to the jurisdiction of the Commission," that is, "any person who owns or operates" facilities for the transmission of electric energy in interstate commerce and to the sale of electric energy at wholesale in interstate commerce. Furthermore, the Act exempts federal, state, and local agencies, electric cooperatives, and federal power marketing administrations, with limited exceptions, from the plurality of FERC authority (Eisen, 2016). For the purposes of this study, publicly owned utility (POU) or public power utility refers to government agencies, certain electric cooperatives, and federal power marketing administrations.

<sup>10</sup> Federal Power Act Section 211A, established by the Energy Policy Act of 2005, expands FERC jurisdiction over the transmission system by authorizing FERC to order an unregulated transmitting utility to file changes to or replace its voluntarily-filed Open Access Transmission Tariff (OATT) to address undue discrimination regarding access to its transmission system. This provision was used for the first time in 2011 when FERC ordered the Bonneville Power Administration to revise its wind curtailment practices to comply with the undue discrimination standards in Section 211A and file an OATT. These curtailment practices, orders, and revisions are still under dispute (Dennis & Brecher, 2015).

Furthermore, experience in RTOs across the U.S. has demonstrated the blurring of federal, state and local responsibilities around certain policy issues and technology innovations. The operation of organized wholesale markets affects policy decisions that traditionally have been under state jurisdiction, such as resources adequacy and transmission planning. Additionally, many new technologies, like storage and demand response, cannot be identified as providing only wholesale or retail services. With the expansion of organized markets and regional governance, the clear division of authority between federal and state regulators has given way to a more complex regulatory system that includes multiple and indirect authorities (See Rossi, 2016).

#### **2.4. The Western Energy Imbalance Market**

The Western EIM initiative that began in 2013 and the seating of the Energy Imbalance Market Governing Body in the summer of 2016 mark a significant move towards electricity grid integration in the West. The EIM is the first successful extension of organized electricity markets in the Western United States beyond California. The EIM differs from an RTO and other organized markets in important ways. An RTO is an organization that takes operational control of participating transmission assets and provides a full range of organized market services, infrastructure planning, and reliability functions to participating utilities, which are subject to FERC rate review. In contrast, the EIM is a mechanism that extends limited real-time market services to participating entities and preserves their autonomy from FERC rate review, operation of transmission assets, and responsibility for reserve obligations. Additionally, the EIM differs from other organized markets operated by RTOs because it emerged after the recent growth of renewable resources transformed the resource mix and operating constraints of the

electricity system; whereas, RTOs originated primarily from pressures to improve system reliability and efficiency. This section provides a broad overview of the case and describes the decision-making processes for each of the phases of the case.

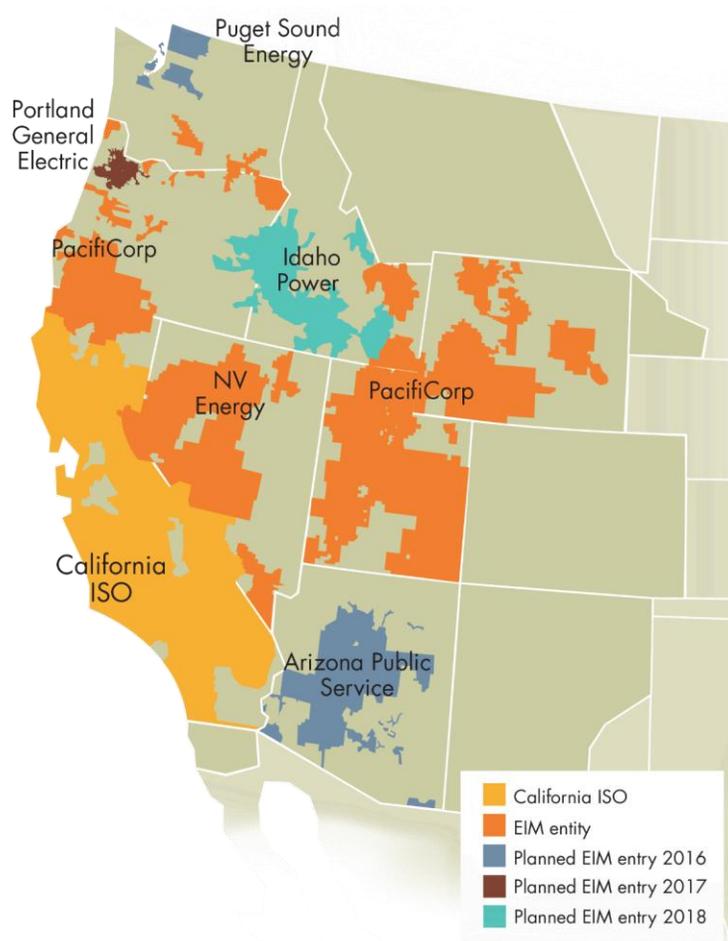
### Overview of the Energy Imbalance Market Initiative

Following efforts in the 1990s and early 2000s to create a west-wide RTO, attention began to focus on alternative mechanisms for integrating renewable resources and improving market efficiency (Cochran et al., 2013; Linvill, Candelaria, & Spalding, 2011; Mai et al., 2012; Milligan et al., 2013; Piwko et al., 2010; Porter et al., 2012; Samaan et al., 2013; Western Electricity Coordinating Council, 2011). From this work, an EIM emerged as an alternative that could contribute to these goals through real-time automated dispatch, improved communications, increased system visibility, and sharing of resources. As designed by the CAISO-PacifiCorp implementation process, participation in the EIM is voluntary and there is no exit fee. Balancing authorities retain functional and planning control over their transmission and retain responsibility for reserve and capacity requirements. Participating balancing authorities do not have access to the CAISO day-ahead or ancillary services markets.

In February 2012, western regulators held an initial meeting of the Public Utilities Commission-Energy Imbalance Market (PUC-EIM) Group. The formation of this Group marked the beginning of formal discussions specifically related to the CAISO EIM initiative that is the focus of this study. In 2013 CAISO and PacifiCorp signed a bilateral agreement to implement an EIM. The EIM creates opportunities for California exports during periods of high renewable resource generation and provides access to flexible capacity needed to accommodate variable renewable resources. In contrast, new market

participants are motivated to join the EIM by a range of interests, including greater efficiency, operational flexibility, access to additional markets, and the ability to integrate wind and solar resources. However, for many of these stakeholders an ability to maintain a level of autonomy from FERC, CAISO, and California policy institutions is critical.

By April 2016, six investor-owned utilities had agreed to participate in the EIM, extending these services to seven states (Figure 2.4). The balancing authorities in remaining regions of the West that are not participating in either an EIM or CAISO manage approximately 30% of the electricity supply in the West (U.S. Energy Information Agency, 2014).

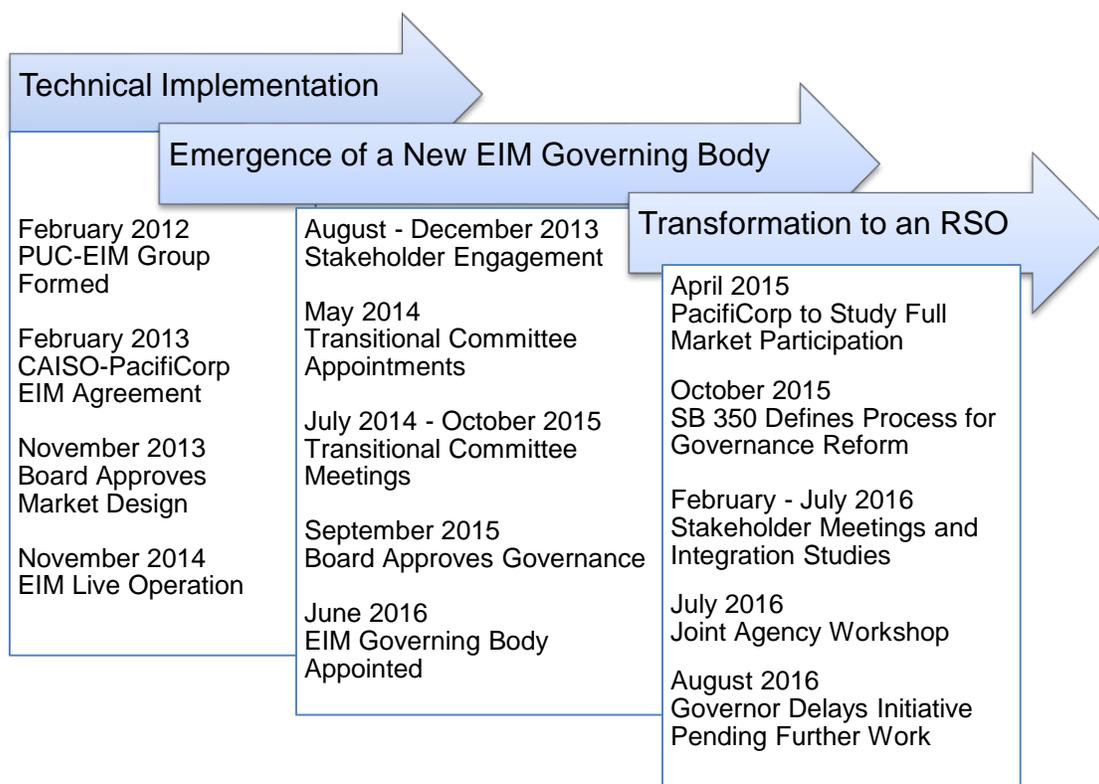


**Figure 2.4. Voluntary Participants in the Western Energy Imbalance Market**

Source: California Independent System Operator, n.d.-b

EIM transactions between CAISO and PacifiCorp began in November 2014 and a Governing Body was appointed in June 2016. The EIM provides economic, reliability, and environmental benefits for CAISO and participating entities. In the second quarter of 2016, total benefits were estimated to be \$88.19 million, and the EIM allowed CAISO to avoid curtailment of 158,806 MWh of renewables (California Independent System Operator, 2016a). However, the anticipated expansion of wind and solar generation to achieve California's 50% RPS and greenhouse gas emission goals continues to present challenges. CAISO is now engaged in multiple initiatives to further improve system flexibility (Loutan, 2015). Additionally, the EIM has elevated fundamental questions about CAISO governance, and the region is now engaged in discussions of a fully organized market across a broader region in the West.

The case focuses on the collective action that occurred around the formation of a new regional Governing Body for the Western EIM (Figure 2.5).



**Figure 2.5. Timeline of Interdependent Decision-Making Fields**

*Technical implementation of the EIM infrastructure proceeded while governance continued to be deliberated. Announcement of plans to explore a regional system operator occurred while the Transitional Committee was still developing governance recommendations.*

### Technical Implementation

In March 2013, CAISO management brought the EIM implementation agreement to their Board of Governors for approval and initiated a stakeholder engagement process. In CAISO, policy implementation issues are deliberated in ad-hoc processes that are open to any interested organization or individual and subject to California open meeting and

open record statutes. Professional CAISO staff support deliberation of issues and move the discussion through an iterative process of straw proposals, comments, and revisions. There is no voting in stakeholder processes. Staff present proposed tariff changes to the board for disposition and any interested person or organization has the ability to provide written or verbal comments on proposals.

In April 2013, CAISO released a straw proposal and issue paper that included detailed proposals for many technical market design and operational implementation issues. This document also identified several policy questions that required additional stakeholder input and discussion. Among these were governance issues, transmission cost allocation procedures, and greenhouse gas (GHG) emission accounting. In reaction to this proposal, stakeholders requested “a more in-depth discussion” regarding governance issues and CAISO established a parallel stakeholder process specifically dedicated to governance (California Independent System Operator, 2013a, 2013c). CAISO, PacifiCorp and other stakeholders focused on implementation of technical issues through the standard CAISO decision-making process. These deliberations were relatively uncontroversial. The CAISO Board of Governors approved the EIM market design changes in November 2013, and as noted above, EIM transactions began in November of 2014.

#### Emergence of a New Energy Imbalance Market Governance Body

In August 2013, CAISO proposed establishing a Transitional Committee (henceforth “the Committee”) that would be authorized as an advisory committee to the CAISO Board and charged with developing recommendations for a long-term independent governance structure. This bifurcation of the decision-making process

recognized a need to foster a space for collaboration, while allowing EIM implementation with PacifiCorp to proceed without delay. This shift in how policy implementation decisions would be negotiated narrowed the issues that needed to be addressed, allowed new stakeholders to play a more meaningful role in the process, and established a separation from CAISO. Between August and December of 2013, CASIO facilitated a process to develop a charter for the Committee. The Committee was appointed in May of 2014 and comprised a total of 13 members including four members from balancing authorities participating in the EIM, two from incumbent CAISO investor-owned utilities and private marketers, two from potential EIM participants, and five from public power, state agencies, or public interest organizations.

The Committee held 16 meetings between July 2014 and October 2015. During this time period two important events occurred. First, the actual EIM market mechanism became operational after only four Committee meetings. Second, in April of 2015 PacifiCorp signed an agreement to explore the feasibility of full participation in the CAISO organized markets. This occurred after the Committee's ninth meeting and in the midst of stakeholder comments on the initial governance structure straw proposal. The Committee decided to continue their work, despite this change in context, and it submitted a recommendation that was approved by the CAISO Board of Governors in September of 2015. The EIM Governing Body was appointed in June of 2016.

#### Transformation to a Regional System Operator

Following the PacifiCorp decision to explore full participation in CAISO, the two organizations worked from April to October of 2015 to define issues and communicate with stakeholders. These steps included initiating bi-weekly regional update calls, issuing

a discussion paper, developing a benefits study, and holding two stakeholder meetings. Additionally, CAISO shared eleven regional grid studies with interested stakeholders. Although this initiative did not follow the standard CAISO decision-making process, CAISO accepted comments on the benefits study.

In October of 2015, the California Legislature and Governor enacted SB 350 (CA SB350, 2015) defining a process for CAISO governance reform to support its transformation into a regional organization. In support of this legislation, CAISO initiated detailed studies of the economic and environmental impacts of regionalization. Additionally, CAISO and PacifiCorp held a joint web conference and the California Energy Commission convened three workshops and a joint agency workshop between February and July of 2016. These workshops provided key stakeholders with the opportunity to present issues and allowed stakeholders to provide oral and written comments. This decision-making process was structured around the requirements and timelines imposed by SB 350 and stakeholders were working to develop a recommendation for the 2016 Legislative Session. In August of 2016, the California Governor notified the Legislature that a regionalization proposal would not be available for debate in the 2016 Session, but that state agencies, including CAISO, would continue to work on a proposal for the 2017 Session.

## **2.5. Conclusion**

In this chapter, I explain the growth of wind and solar resources in the West and the pressure this creates for policy change; the distinct electricity infrastructure governance approaches within CAISO and in non-RTO regions of the West; and the complexity that RTOs introduce to electricity system regulation. CAISO is perceived as

tightly aligned with California policy making. It operates within a single state, is authorized by state statute and FERC, and is dominated by three large investor-owned utilities and a partially restructured industry. In contrast, the non-RTO regions of the West are diverse. The balancing authorities are much smaller than CAISO, are located across 13 states with diverse energy policy goals, and the region is shaped by public power and a vertically integrated industry. These differences in infrastructure, regulation, policy goals, and resource mix mean that any expansion of organized markets involves complex negotiations and different perspectives regarding potential political and economic benefits risks of collaboration, as well as the complications introduced by California statute and FERC jurisdiction in relation to public power.

This chapter also introduces the unique concept of the EIM and explains that it differs from an RTO in critical aspects. An EIM provides more limited market services than an RTO, but allows participating utilities to retain autonomy over rate regulation, transmission operations, and reserve capacity for reliability. This chapter also explains the three interdependent phases in the implementation of the EIM market mechanism and the decision-making process that resulted in seating of an innovative EIM governance body and in legislation authorizing the first steps toward the creation of a Western RSO. This transition marks a significant shift in the relationships among federal regulators, state regulators, and utilities in the West. It represents a successful effort to enable policy change after nearly 20 years of stability in which stakeholders resisted organized electricity markets despite their widespread adoption in other regions of the U.S. and around the world. To understand how this policy change occurred, Chapter 3 reviews

theoretical literature on policy implementation, action fields, and organizational studies that provide a framework for my research.

## CHAPTER THREE: LITERATURE REVIEW

Regional transmission organization (RTO) governance structures and their accountability to the public interest have been an ongoing source of debate (Dworkin & Goldwasser, 2007; Eisen, 2016; Rossi, 2016). In this debate, considerable attention has focused on how to improve accountability to the public interest and the appropriate balance between state and federal regulatory jurisdiction. The difficulty in addressing these issues is compounded by the rapid transition of the electricity system over the past two decades and the evolving relationships between RTOs, policy goals, and technology. My research takes up questions of political control and democratic accountability through the lens of social negotiation and authority. In particular, I ask how RTO stakeholders themselves negotiated multiple and conflicting sources of authority to legitimate certain actions. In broad terms, I am interested in understanding how stakeholders within policy implementation systems reconcile ambiguous and often conflicting authorities to produce change and pursue collective interests. This process is central to understanding how state organizations within governance systems seek to exercise discretion and sustain accountability to the public interest.

The purpose of this chapter is to review several bodies of literature that provide the background for this research. In particular, because RTOs inherently involve voluntary coordination of multiple organizations, I explore the topics of authority, social negotiation, and subsystem interdependencies within the context of policy

implementation that spans the responsibilities of more than one organization. Policy process and institutional theories use the concept of policy entrepreneur to identify the importance of individual agency in driving policy change and are generally focused on understanding policy implementation through competing coalitions and instrumental motivations. However, these theories have little to say about the strategies and actions of actors that contribute to change. Because the concepts of policy entrepreneur, identity, and voluntary cooperation are under-theorized in the policy process literature, I draw on field theory, and an application of these ideas to policy implementation, to provide a framework for investigating the complex social mechanisms that explain why things are done in a particular way.

This dissertation thus departs from most theories of policy implementation or policy process in three important ways. First, unlike rational choice approaches, this research does not presume that rules and resources are known or fixed, but rather that they are produced, reproduced, and altered by socially skilled actors in relation to collective interests. In addition, rather than theorizing individual agency as motivated only by self interest, individual and collective action is theorized as being driven by a desire to construct meaning in relation to others and interests are defined and negotiated in relation to others (Fligstein & McAdam, 2012; Giddens, 1984; Moulton & Sandfort, 2017). Second, this research focuses directly on the interdependencies among policy subsystems. Recognizing the ties among related social systems and the social system that forms around any given policy implementation intervention, this research explores how these ties *routinely* introduce discursive resources and different sources of authority (Fligstein & McAdam, 2012; Hardy, Lawrence, & Grant, 2005; Moulton & Sandfort,

2017). Third, this research adopts a discursive perspective, which builds on communication and interorganizational collaboration literature, to identify how discourses produce identities, shared meanings, and lead to particular practices. This approach shifts attention from the intentions of individuals to their observable communication practices and the effects of those practices on social relations (Hardy et al., 2005; Koschmann & Burk, 2016).

Regional transmission systems (RTOs) represent an interesting case of complex governance and provide an opportunity to focus on the social interactions that are part of implementation in practice. For example, the California Independent System Operator (CAISO) is a space for organizations to negotiate market, planning, and operational rules. CAISO decision-making relies on open stakeholder participation, staff-driven processes, and Board approval of tariff changes. FERC requires RTOs to be both independent of and responsive to stakeholders (Federal Energy Regulatory Commission, 2000, 2008). As such, RTOs must balance the interests of direct market participants with those who may not be direct participants but are affected by market transactions nonetheless.

The stakeholders that participate in CAISO decision-making processes include investor-owned utilities, publicly owned utilities, generators, marketers, alternative energy providers, new technology suppliers, trade associations, state policymakers and regulators, and civil society organizations. CAISO does not have a formal concept of member and uses the term stakeholder to refer to any interested individual or organization. Following this convention, my research uses the same broad definition of stakeholder to refer to the wide range of private, public, and civil society organizations

and individuals interested in clean energy, organized markets, and electricity system reliability and affordability.

This dissertation draws from several theoretical traditions relevant to public policy, action fields, and organizational studies. In this chapter, I examine where these various theoretical concepts intersect, and why this intersection is significant for understanding RTO governance. First, this chapter provides an overview of policy implementation literature focusing on definitions and theoretical concepts used to explain change and stability. Next, I review the literature on field theory as it relates to multi-organizational policy implementation and particularly to implementation that requires cooperation and innovation. Then, drawing on field theory concepts, I review research on authority, social negotiation, and field interdependencies. Next, the chapter explains the discursive approach in organizational studies, its relevance to multi-organizational policy implementation, and its connection to understanding social negotiation, strategies and practices. Finally, drawing on the concepts from these literatures, the chapter identifies several research questions that serve as the basis of the empirical investigation.

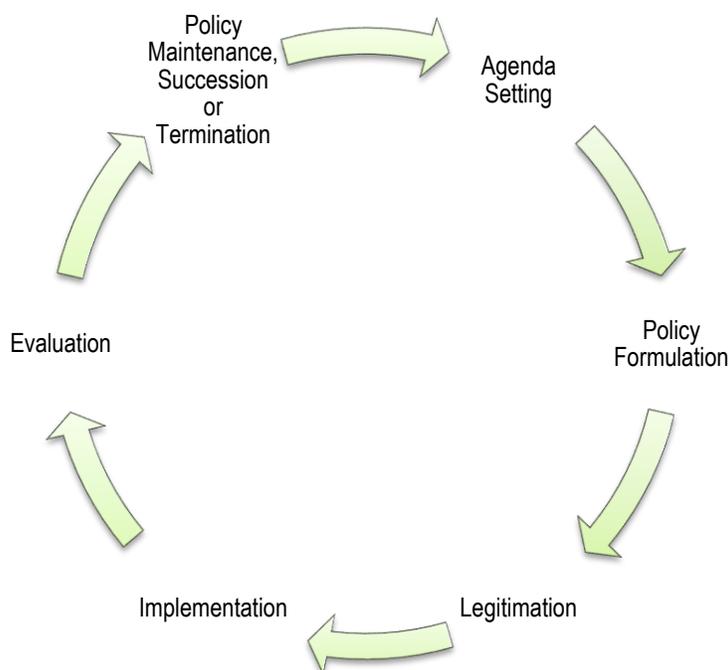
### **3.1. Policy Implementation**

This section describes policy implementation, with a specific focus on the social processes and interdependencies that explain change and stability within policy implementation systems.

#### Definitions

Public policy implementation has been defined as the “carrying out of a basic policy decision” (Sabatier & Mazmanian, 1980, p. 540). Traditional public policy scholars focus on the role of implementation as a stage in the policy process falling

between selection and evaluation and as something distinct from policy formulation (Brewer, 1974; Lasswell, 1956) (Figure 3.1).



**Figure 3.1. Policy Process Cycle**

Source: Adapted from Cairney, n.d.

This research focuses on centralized policy formulation and goal achievement (Bardach, 1977; Pressman & Wildavsky, 1973; Sabatier & Mazmanian, 1980) and has expanded to include research on policy design choices (Ingram & Schneider, 1990; Schneider & Ingram, 1990) and levels of ambiguity and conflict (Matland, 1995). This research highlights the importance of causal theory.

In contrast, other scholars have challenged the definition of implementation as a distinct stage in the policy process. These scholars emphasize the interaction between the stages that occurs in practice and focus on implementation as a process of negotiation (Barrett & Fudge, 1981; Hill & Hupe, 2014; Nakamura, 1987). This implementation

research seeks to provide local explanations for empirical variations in outputs or outcomes (Berman, 1978; Hjern & Porter, 1981). It has drawn attention to administrative discretion and the role of coordinating mechanisms (Agranoff & McGuire, 2003; Lipsky, 2010; Milward & Provan, 2003; Provan & Kenis, 2008; Sandfort, 2000) and highlights the complexity of local contexts and the existence of multiple policies and authorities within an implementation subsystem.

Policy implementation is further defined by the problem of multi-actor or multi-organizational action. Scholars have long recognized that implementation inherently involves the “complexity of joint action” (Pressman & Wildavsky, 1973). The more recent shift in the pattern and style of governing to relationships between actors and levels that are less hierarchical and involve implementation that spans the responsibilities of more than one organization add to this complexity (Hill & Hupe, 2014; Lynn et al., 2001; Meier & O’Toole, 2006). This move toward governance alters the locus of decision making, expands the scope of delegated authority, draws attention to how processes are carried out in practice, and requires more reliance on cooperation and negotiation (Meier & O’Toole, 2006; Moran et al., 2006).

#### Social Processes and Interdependencies

Drawing on these definitions and concepts, implementation research often closely ties to questions of political control and democratic accountability or focuses on identifying structures to improve outcomes either in terms of alignment with formal policy or integration into the implementation system (Hill & Hupe, 2014). Policy process literature brings attention to the idea of implementation as policy change. Broadly, this research focuses on the interactions between public policy and actors, events, contexts,

and outcomes (Weible, 2014). These frameworks and theories are not specific to implementation or to a specific stage in the policy process, but provide concepts and insights for understanding different aspects of policy change or stability and therefore, can be useful in understanding implementation. For example, the Advocacy Coalition Framework (Jenkins-Smith et al., 2014; Sabatier & Jenkins-Smith, 1993) was designed to integrate findings from earlier implementation research and is most useful for understanding coalitions, learning, and policy change in high-conflict situations.

Several policy process frameworks and theories draw attention to the role of individuals in driving policy change (Baumgartner & Jones, 2009; Kingdon, 2011; Lindblom, 1959; Lindblom, 1968; Olsen & March, 1989; Sabatier & Jenkins-Smith, 1993). These actors behave strategically to influence decisions, enable policy learning, or shape outcomes and are sometimes referred to as policy entrepreneurs or policy brokers. For example, the Multiple Streams Theory introduces the concept of a policy entrepreneur and conceptualizes policy change as a dynamic interplay between human agency and enabling and constraining organizational structures embedded in situational contexts (Sætren, 2016). These theories, with notable exceptions, have little to say about what strategies and actions by actors contribute to change (Kingdon, 2011; Mintrom & Norman, 2009; Pierce et al., 2014; Sætren, 2016). Suggested strategies include framing decisions as gains or losses, manipulation of sequential decision making, use of symbols to appeal to emotion and cognitive meanings, assigning values, creating narratives, typifying, displaying social acuity, defining problems, building teams, and reducing the perception of risks (Mintrom & Norman, 2009; Nicholson-Crotty & Meier, 2005; Schneider & Ingram, 2005; Zahariadis, 2003).

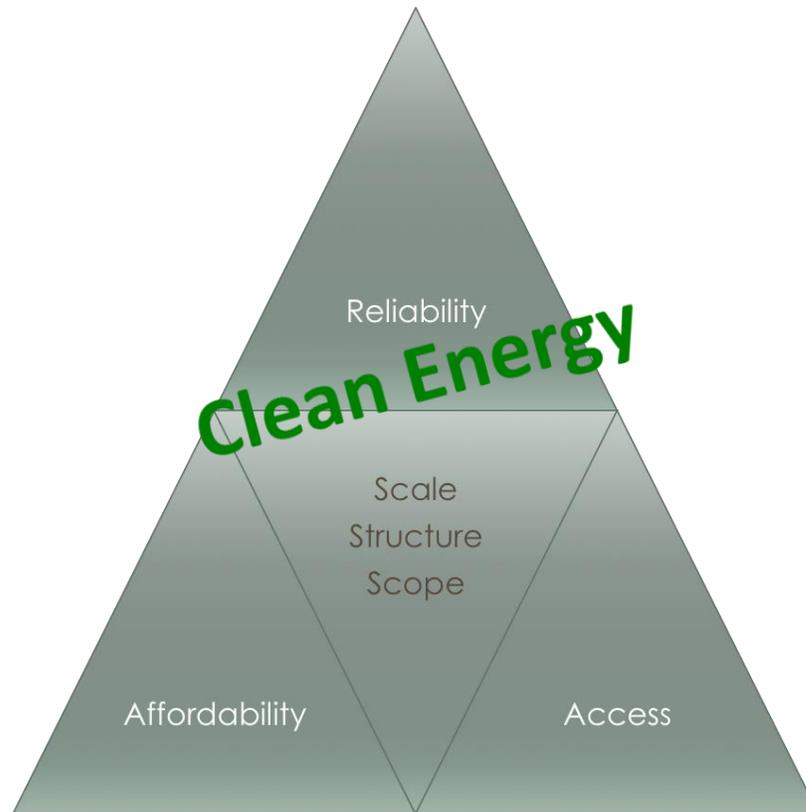
Most policy process frameworks and theories focus on a single policy system or subsystem as the level of analysis (Cairney & Heikkila, 2014). Several of these theories also highlight the role of stable and dynamic external effects on change or stability (Baumgartner & Jones, 2009; Kingdon, 2011; Sabatier & Jenkins-Smith, 1993; Schneider & Ingram, 2005). For example, the Advocacy Coalition Framework conceives of policy subsystems as *semi-independent* with the potential for overlaps and nesting with other subsystems. This framework acknowledges that subsystem decisions are affected by and can affect external subsystem affairs and highlights the importance of *spillover effects* from other policy subsystems (Jenkins-Smith et al., 2014). While empirical research has supported the importance of external events or shocks in driving policy change (Barke, 1993; Bischoff, 2001; Nohrstedt, 2005; Nohrstedt & Weible, 2010), there is a need for additional research on the role of subsystem interdependencies in driving change (Weible, Sabatier, & McQueen, 2009). Interdependencies occur within and across subsystems and are theorized to shape identities and result in coordination among actors with shared beliefs (Fenger & Klok, 2001; Litfin, 2000; Zafonte & Sabatier, 1998). Coordination is defined as an actor altering its own strategies to accommodate the activity of others in pursuit of similar goals (Zafonte & Sabatier, 1998). Interdependencies can be understood as a boundary or frontier, in terms of the resources that enable actions, or in terms of functional ties in which actions are linked or causally related to each other (Fenger & Klok, 2001; Litfin, 2000; Zafonte & Sabatier, 1998).

This research highlights the importance of understanding implementation through the causal relationships between processes, outcomes and the formal and informal authorities that form through centralized organizations and local contexts. It also brings

attention to an understanding of implementation as policy change driven by various interactions among contexts, actors, events and outcomes. It provides important insights for understanding the role of social skills and interdependencies in policy implementation and also highlights that these are two areas where additional research is needed. The next section reviews literature from field theory that provides insight into each of these issues.

### **3.2. Strategic Action Fields**

The electricity infrastructure and institutions of the 20<sup>th</sup> Century were designed with a particular: 1) scale reflecting geographic reach, 2) structure reflecting the relationship between public institutions and private industry structure, and 3) policy scope aligned to the technologies and energy system values of the time which included equal access to electricity, affordability, and reliability of service (Figure 3.2 see Dworkin et al., 2013; Hirsh, Sovacool, & Badinelli, 2010; Hughes, 1987; Stephens, Wilson, & Peterson, 2015). The responsibilities and authorities of RTOs, regulators, and energy policymakers are deeply enmeshed with one other and with the decisions of actors in the electricity sector. As the electricity sector transitions to clean energy resources, new technologies are shaping policy implementation through electricity grid planning, operations, and market rules; at the same time, these policy implementation decisions are determining the value, development, and operation of existing system assets and emerging technologies. This co-evolution of technology and policy is a fundamental aspect of energy policy change.



**Figure 3.2. Shift in Electricity System Values**

*The co-evolution of technology and energy system values shapes the scale, structure and scope of the electricity system. Clean energy values are reshaping this complex socio-technical system.*

In this complex sociotechnical system, policy implementation spans the responsibilities of more than one organization and involves multiple, interconnected levels of action. Therefore, it is essential to consider energy policy implementation from a governance framework in which policy implementation spans the responsibilities of multiple organizations and the boundaries between public and private have blurred (Hill & Hupe, 2014; Lynn et al., 2001; Meier & O’Toole, 2006; Moulton & Sandfort, 2017; Ostrom, 2011).

Policy implementation literature from a policy process perspective focuses on identifying causal relationships and predicting outcome effects (Jenkins-Smith et al., 2014; Kingdon, 2011; Sabatier, 1986; Sabatier & Jenkins-Smith, 1993, 1999; Sabatier & Weible, 2007; Zahariadis, 2003). These literatures emphasize how political control, power, and authority contribute to implementation success or failure. However, the interdependent and dynamic nature of energy policy implementation requires action by multiple organizations engaging at different levels and within a context of multiple and often conflicting sources of authority (Goldthau, 2014; Ostrom, 2011). Understanding the interaction among these authorities based on fixed descriptions of rules or resources can be difficult. Policy implementation in complex systems requires a framework that also incorporates the social mechanisms that explain how and why things get done in a particular way.

Moulton & Sandfort (2017) propose a strategic action field framework as a way of making sense of this complexity and the variations of local implementation in practice by focusing on which authorities are *activated*, or perceived to be legitimate. This framework identifies two components that are useful in defining a bounded system for the study of policy implementation: a focus on a public service intervention and decision making at multiple levels of strategic action. The framework also describes change driven by the use of social skills to legitimize various sources of authority, which is addressed in Section 3.3.

#### Public Service Intervention

Moulton & Sandfort (2017) focus on the interaction between structure and action as an ongoing emergent process at key sites within the implementation system. Using this

perspective, research is centered on a public service intervention that embodies ideas about creating change. The EIM extension of organized market services can be conceptualized as this type of a public service intervention. An important aspect of this approach is the recognition that policy implementation often requires change to existing interventions as well as modifications to a proposed intervention. Like policy process theories, implementation is defined in terms of policy change, but the level of analysis is a public service intervention around which collective action occurs. This shift focuses attention on the social processes and negotiations that drive change. Specifically, policy implementation is defined as “deliberate, institutionally sanctioned change to a public service intervention that is legitimated in part by political authority” (Moulton & Sandfort, 2017, p. 145). From this perspective, a particular public service intervention both shapes implementation dynamics and is shaped by social interactions. For example, the EIM extension of organized market services requires technical and policy changes to the existing mechanisms for power trading in CAISO and in the non-RTO regions of the West, which engaged particular actors in specific processes, and details of these market mechanisms were negotiated and altered through the implementation process.

### Strategic Action Fields

Drawing on Fligstein & McAdam (2012) and Moulton & Sandfort (2017), strategic action fields can be understood as bounded social systems that form around shared understandings about purposes, relationships among members, and rules governing legitimate action. Field boundaries are emergent and are produced and reproduced through the interaction of actors. Multiple and often overlapping strategic action fields form around any given policy implementation intervention and enable or

constrain what is possible to change (Fligstein & McAdam, 2011, 2012; Moulton & Sandfort, 2017). For example, the expansion of organized market services was implemented through multiple stakeholder processes each focused on different aspects of the public service intervention and involving various combinations of stakeholders orienting to the intervention based on the unique rules, resources, and social interactions that serve to define the stakeholder process as a distinct strategic action field.

Importantly, policy implementation outcomes are viewed as the result of dynamic interactions between structures and socially skilled actors. This perspective draws on organizational sociology and emphasizes that structures, which consist of rules and resources, are emergent and shaped by human agency (DiMaggio & Powell, 1991; Fligstein & McAdam, 2012; Giddens, 1984). From this perspective, organizational structures are continually produced through interaction and also shape that interaction. Within a system of competing values and belief systems the groups with the most power are those that have best integrated their interests into the structuring of the organization (Mumby, 1987, p. 116). Thus, in policy implementation systems that involve ambiguous or competing authorities, the ability to integrate a particular interpretation of an authority into the structuring of the organization serves to legitimate the practices that are enacted.

The implementation of clean energy policy is complex and can occur simultaneously in multiple fields and at multiple levels. Moulton & Sandfort (2017) differentiate three levels of fields based on scale of action: policy, organizational, and frontlines. Organizations may participate in more than one field, at multiple levels, and engage in implementation activities in different fields simultaneously. In this way implementation can be understood as a system in which the levels of implementation are

connected and influence each other. For example, the expansion of organized markets in the West can be understood through the initial policy field level conversations in which stakeholders determined which policy options to pursue, the logic of change, and which processes are desirable. It can also be understood through a focus on where and when implementation occurred at the organizational level as policy ideals were reconciled and integrated with existing market products and protocols.

### **3.3. Drivers of Change: Authority, Social Skills and Interdependencies**

The field theory literature proposes three drivers of change: authority, social skills and interdependencies. Each of these is addressed below.

#### Authority

The Strategic Action Field Framework focuses on the activation of legitimate authority as fundamental in shaping how policy implementation occurs in practice. As defined by Weber authority can be understood as a legitimate form of power (cited in Benoit-Barné & Cooren, 2009, p. 6) and within a given policy subsystem or strategic action field, policy implementation often involves ambiguous authority relationships or competing sources of authority (Benoit-Barné & Cooren, 2009; Koschmann, 2012; Moulton & Sandfort, 2017; Ostrom, 2011).

Authority can derive from a range of non-material sources, including legal instruments, hierarchical position, political relationships, economic incentives, norms, and shared beliefs. From the perspective of structuration theory, the significance of any particular source of authority is interpreted in context. Social structures consist of rules, which are the patterns people follow, and resources, which control people or objects. Social structures are emergent and form through interaction with actors (Fligstein &

McAdam, 2012; Giddens, 1984). According to Moulton & Sandfort (2017) "...the significance of any rule or resource is not predetermined; actors make decisions about the relative importance..." (p. 146). For example, RTOs are required to balance the interests of direct market participants, state regulatory policies, FERC policy directives, and the interests of those affected by market transactions. These interests are reflected through a combination of state and federal formal political authorities, the distribution of benefits and costs associated with power market transactions and transmission infrastructure, and various organizational norms and beliefs that enable and constrain what is considered possible. Policy implementation is thus understood as a process of negotiating which sources of authority provide rationale for practices that are enacted and involves actors in a process of interpreting what is and what is not possible.

In voluntary collaborations, such as an RTO or the EIM, formal authority from political or economic mechanisms is limited and cultural authority derived from shared meanings and collective identity becomes more important in providing the rationale for collective action (Fligstein & McAdam, 2011; Hardy, Lawrence, & Grant, 2005; Koschmann, 2012). This is of particular relevance for understanding RTOs and the expansion of EIM markets. The stakeholders involved in discussion of market rules and governance are engaged in collaborative relationships that are voluntary and only bound within certain limits by formal authority or exchange of resources. This type of collaborative relationship to determine market structures is identified by Lawrence, Phillips, & Hardy (1999), which clarifies that it is possible for organizations to engage in voluntary collaborative relationships that are critical to joint success in the marketplace.

These formal and informal sources of authority can be theorized as more than just structural properties of the strategic action field. We can also analyze them as discursive resources that actors draw on as a rationale for action around a public service intervention.

### Social Skills

To go beyond identifying the sources of authority that provide rationale for certain actions or constrain what is perceived as legitimate action, and gain insight into *how* change occurs, the Moulton and Sandfort (2017) framework focuses on the social skills of actors as drivers of change or stability. From a field theory perspective, action within fields can occur through competition, coercion, and cooperation, and consideration of all these different types of coordination is fundamental to analysis. However, collective action among voluntary participants depends on cooperation. Actors induce cooperation and achieve negotiated authority through interactions in which members work to convey purpose, shared meanings, and collective identities (Cooren, 2010; Fligstein & McAdam, 2012; Koschmann & Burk, 2016; Kuhn, 2008; Taylor & Van Every, 2014). Social skills can include tactics such as framing, agenda setting, brokering resources, or seizing opportunities (Fligstein & McAdam, 2012, p. 46). This construct of social skills is based on a model of the individual that differs from the model used in most policy process frameworks and theories.

Fligstein and McAdam (2012) suggest that any adequate model of the individual or theory of human strategic action must account for both instrumental and existential motives (Fligstein & McAdam, 2012, p. 43). Instrumental motives reflect individual and collective self-interest and form the basis for the rational choice and bounded rationality

models used in most theories of the policy process. Existential motives reflect the human need to fashion shared meanings and identities. This model of the individual, which recognizes both instrumental and existential motives, is particularly useful in understanding voluntary collaboration that depends on cooperation. Importantly, given the assumption that humans seek sociability and define meaning in relation to others, legitimacy is an important driver of strategic action.

Fligstein and McAdam (2012) challenge scholarship that focuses on the disposition or personal qualities of an individual and suggest instead that “entrepreneur” is a role in which socially skilled actors vary in their ability to recognize the structural situation, produce shared meanings, and take advantage of their resources, positions, relationships, and rules. In particular, Fligstein and McAdam (2012) challenge the traditional concept of human agency as entrepreneurship, in which agency is only relevant at particular moments or for particular individuals. From a field theory perspective, “individuals and groups are always acting and they are always looking for an edge” (Fligstein & McAdam, 2012, p. 180). The structure of the field determines what actions make sense and social skills give actors an understanding of their opportunities and constraints.

### Interdependencies

Fligstein and McAdam (2012) conceive of fields as embedded within a complex web of other fields that can be distant or proximate and can be dependent, interdependent or independent. From this perspective, “the stability of any given field is largely a function of its relations to other fields” (Fligstein & McAdam, 2012, p. 19). The ties among fields impose constraints and opportunities that are *routinely* affected by actions

in other fields. Thus, stability is a dynamic process of interaction among actors and the opportunity for change occurs through interactions that involve “innovative and previously prohibited forms of collective action” (Fligstein & McAdam, 2012, p. 21).

Drawing on field theory, the Strategic Action Field Framework allows researchers to explore how policy implementation processes occur across multiple fields and focuses attention on how the horizontal and vertical ties among these fields affect the purposes of the field, the actors who are involved, what is possible, and introduce new discursive resources and sources of authority (Fligstein & McAdam, 2012; Moulton & Sandfort, 2017).

### **3.4. Discursive Approach and Collaboration**

The strategic action field framework brings attention to policy implementation as a collective action and to the dynamic interaction between social structures and actors. Fligstein and McAdam (2011, 2012) consider shared understandings about purpose and relationship to other actors as fundamental to the emergence, stability, and transformation of strategic action fields. Interorganizational collaboration theory extends this conceptualization by focusing on communicative practices and providing additional insight into *how* actors create shared meanings and collective identities (Hardy et al., 2005; Hardy, Lawrence, & Phillips, 1998; Hardy, Phillips, & Lawrence, 2003; Koschmann, 2012; Koschmann & Isbell, 2009). This literature examines the role of conversations and discourse in creating the shared meanings and collective identities that lead to collective action. Discursive practices and skills include the following: metaphor, symbolic contrast, abstraction, ideological rhetorical strategies, negative or positive

framing, self-referencing rationalities, privileging, recognition, resistance, translation, and boundary spanning (see, for example, Koschmann, 2016).

Within this literature, collaboration is defined as “a cooperative interorganizational relationship that relies on neither market nor hierarchical mechanisms of control” (Lawrence et al., 1999, p. 481) and collaboration can be understood as “the discursive negotiation of the issues to be addressed by the collaboration, the interests relevant to the collaboration, and the actors who should represent these legitimate interests” (Lawrence et al., 1999, p. 479). Building on these ideas about the central role of discourse, Hardy, Lawrence and Grant (2005) provide a model that uses a discursive approach to describe the formation of collective identity and shared meanings. A discursive approach allows researchers to track language in use, rather than attempt to understand stakeholder beliefs. A discursive approach also allows a researcher to focus on various levels of interaction, within an organization or at a broader societal level, and explore interrelationships among these levels (Hardy et al., 2005). Drawing on a discourse perspective emphasizes the dynamic nature of implementation and provides a useful way of understanding individual and collective meanings, policy learning, and how social skills are enacted in practice.

The social negotiation of authority involves stakeholders in a process of interpreting what is and what is not possible. Interactions and conversations produce discursive resources that stakeholders draw on to create and legitimate courses of action (Hardy et al., 2005). These discursive resources are produced to make sense of issues on which there is general agreement and to reflect other issues in disparate or conflicting terms. Drawing on Hardy et al. (2005), socially skilled actors employ discursive

strategies to develop shared understandings of collective identities, agreements about key issues, and constructions that attach key issues to individual participants and their particular perspectives. In this model, innovation occurs when the process of change leverages differences among participants and balances divergent stakeholder concerns.

When stakeholders have different interpretations of how policy implementation should proceed, these negotiations bring into focus the different meanings for particular issues or material things (Nelson-Marsh, 2017). The concept of *boundary objects* has been developed to make sense of cases where actors are coordinating work without reaching consensus and to help understand the social practices involved in negotiating these differences and managing the tensions between different viewpoints (Bowker & Star, 1999; Susan Leigh Star & Griesemer, 1989). A boundary object incorporates the interpretive flexibility of a loosely structured common concept, more specific local interpretations that make the concept useful for work that is not coordinated, and a process of tacking between these forms of the object to coordinate work without consensus (Star, 2010; Star & Griesemer, 1989). Stakeholders must explore and discuss the symbolic boundary formed by different meanings before they can collaboratively construct a shared understanding of the object and develop a legitimate course of action (Nelson-Marsh, 2017).

Interorganizational collaboration literature also provides insight into understanding how interdependencies among fields drive stability and change. In this context, socially skilled actors engage in boundary spanning to sustain discourses, sustain collaborative spaces and provide symbolic interpretation of legitimacy (Koschmann, 2012; Koschmann & Isbell, 2009; Nelson-Marsh, 2017; Schneider, 2009; Susan Leigh

Star & Griesemer, 1989). Incorporating these concepts within the strategic action field framework provides a useful way of examining *how* different stakeholders engaged in the implementation process.

### **3.5. Conclusion and Research Questions**

In summary, this dissertation combines literature on policy implementation, action fields, and interorganizational collaboration to extend two concepts in policy process literature that have been under-theorized. First, many policy process and institutional theories use the concept of policy entrepreneur or policy broker to identify the importance of individual agency in driving policy change. However, this concept is not well developed (Fligstein & McAdam, 2012; Sætren, 2016; Weible et al., 2009). Second, much of the policy process theory, and in particular the Advocacy Coalition Framework, addresses the complexity of implementation by partitioning the analysis into specific policy subsystems or contexts and focusing on competition among interests within the subsystems. These theories provide limited insight into understanding subsystem interdependencies or cases, in which cooperation and the need for innovation is a driver of change (Fligstein & McAdam, 2012; Weible et al., 2009). The research approach outlined in Chapter 4 provides additional insight into the role of agency and cooperation in policy implementation by focusing on the social negotiations used by actors to promote change or enable stability. It also provides additional insight into field interdependencies by focusing on the horizontal and vertical ties among overlapping bounded social systems that work to implement policy.

To further my driving interest in policy implementation, this study focuses on a specific intervention, the expansion of organized energy imbalance market services in the

West, and asks how stakeholders, using social practices and strategies, created and legitimated sources of authority to establish a Governing Body for this new market service. This study sought to answer the following research questions:

RQ1: What sources of authority provided rationale for the practices that were enacted?

RQ2: What social practices or strategies did stakeholders use to de-authorize or legitimate these sources of authority?

RQ3: What influenced the definition of boundaries around the separate strategic action fields?

## CHAPTER FOUR: METHODS

This chapter presents the research methodology used for collecting and analyzing data. It explains the selection of methods, describes the selection of the case, sampling, data collection, data analysis, and interpretation.

### **4.1. Selection of Methods**

This research uses a single case study and a qualitative methodology. A single case study approach is particularly useful for my interest in understanding the process and dynamics of a unique change in energy system governance. Additionally, a qualitative methodology is selected based on my interest in understanding the dynamic interaction among organizations during energy policy implementation; the social practices and strategies used to induce cooperation and create shared meanings; and the negotiation of authority.

This research has a combined purpose. First, the aim is to conceptualize a context that is itself of interest. In this way my research is primarily an intrinsic case (Stake, 2005). However, the case is also of interest in advancing our understanding of how multi-organizational policy implementation and interorganizational collaboration occur in practice and in this way serves as an instrumental case (Stake, 2005). Furthermore, while the aim of the research is to conceptualize a context, the approach and methods allow me to demonstrate how and in what ways my findings may be transferable to other contexts or used by others (Denzin & Lincoln, 2011; Merriam, 2009; Simons, 2009). In particular,

the discussion of my findings identify concepts and processes that can be generalized to other regulatory policy implementation contexts and provide empirical evidence of and extend our understanding of theories that have not been validated with many studies.

This approach responds to calls for energy research to focus on the human dimensions of the system, address questions that are relevant to real world problems, and recognize the complex contexts, histories, and multiple perspectives within which the electricity system is embedded (Goldthau, 2014; Sovacool, 2014). Sovacool (2014) reviewed 4,444 research articles in three leading energy journals from 1999 to 2013 and found that only 12.6% utilized qualitative methods and less than 5% used qualitative methods other than survey analysis (Sovacool, 2014). This research also responds to an identified need in policy implementation and interorganizational collaboration literature to investigate the social mechanisms that explain how organizations collaborate and why things get done in a particular way (deLeon & deLeon, 2002; Goggin, Bowman, Lester, & O'Toole, 1990; Hardy et al., 2003; Lewis, 2006; Moulton & Sandfort, 2017; O'Toole, 1986).

Qualitative case study research can be characterized as particularistic, descriptive, and heuristic (Merriam, 2009). As such, qualitative case studies are appropriate for exploring problems in practice (Cronbach, 1975; Merriam, 2009; Simons, 2009; Stake, 2005) and for exploring unique phenomenon (Merriam, 2009; Simons, 2009; Stake, 2005). My study takes a problem-based approach by examining how negotiations among stakeholders shaped the EIM governance structure that emerged and the role and strategies of utilities, generators, regulators, policymakers, advocates, and non-asset owning stakeholders in these conversations.

The qualitative methods selected for this research rely on multiple sources of information and thick description, immersion in the context, and the self-reflexivity of the researcher (Lindlof & Taylor, 2011; Tracy, 2013). These methods are used to study the performance and practices of communication. By observing what people actually do and the discursive practices they engage in, these methods allow me to go beyond description to focus on interpretation of how and why processes unfolded as they did, the tacit understandings of a culture, and the ways in which communication constructs or constitutes cultures and organizations (Kuhn, 2005; Lindlof & Taylor, 2011; Tracy, 2013). My research is focused on understanding the policy implementation process that occurred in establishing the EIM governance structure and the ways in which the ongoing communicative processes among participating stakeholders provide insight into “the ability to induce cooperation by appealing to and helping to create shared meanings and collective identities” (Fligstein & McAdam, 2012).

#### **4.2. Research Site and Selection of the Case**

The Western EIM initiative is a rich case of evolving electricity system governance and provides a unique opportunity to study policy implementation and interorganizational collaboration as they occur in practice. Furthermore, the initiative is of interest because it is fundamentally changing the decision-making processes and relative influence of stakeholders in the West. The decisions about governance will shape the distribution of benefits and burdens across the region for years to come.

My qualitative case study is defined by the collective action that occurred around the formation of the new regional governance structure for the EIM. It is bounded by the initial meeting of the Public Utilities Commission-Energy Imbalance Market (PUC-EIM)

Group in February 2012 and by the decision by California Governor Jerry Brown in August 2016 to delay submission of a broader regionalization proposal pending further work on the issue (see Section 2.4 for additional detail on the case). Before 2012, there were informal discussions and several analyses regarding the potential benefits of energy imbalance markets; however, the formation of the PUC-EIM Group marked the beginning of formal discussions specifically related to the CAISO EIM initiative that is the focus of this study.

The EIM initiative is an excellent research site because the organizations involved in the implementation effort provided many opportunities for any interested member of the public to access many of the documents and meetings that shaped the process. I was able to gain access to the research site by signing up for meeting notifications, reviewing documents available online, observing public meetings, and reviewing audio recordings or transcripts of meetings made publicly available on the CAISO website. The only meetings that required pre-registration for participation were the two on-site meetings I observed.

### **4.3. Sampling and Data Collection**

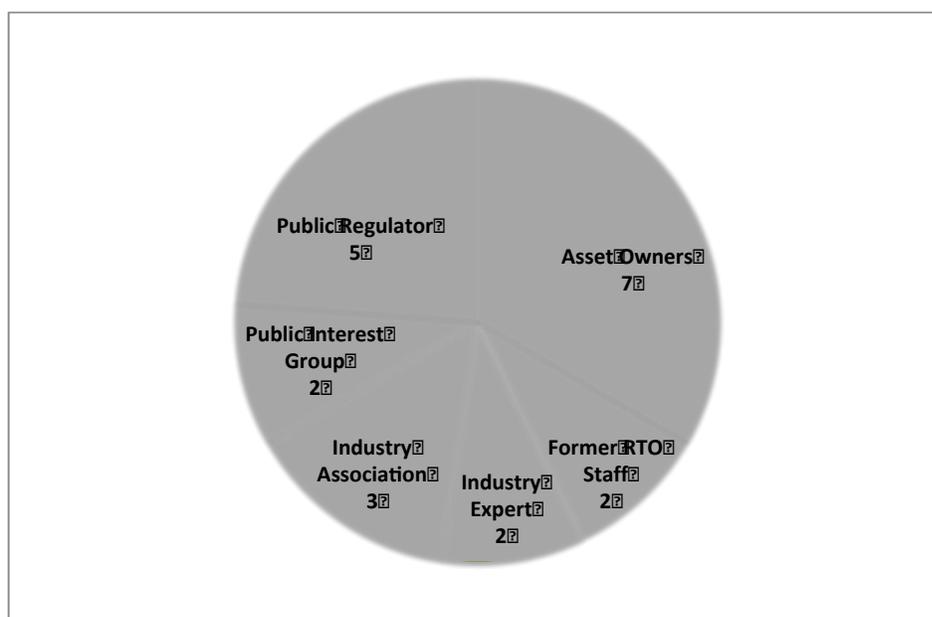
The qualitative data collection methods for this research project include participant interviews, immersion and systematic observation of decision making in context, detailed observation fieldnotes, and document review. All data for this study was collected with approval from and in accordance with Boise State University Institutional Review Board policies and procedures (IRB protocol number: EX 042-SB11-132 and EX 042-SB11-016). All interview and meeting observation data was managed and reported in a manner that maintains the confidentiality of the interviewees and participants.

### Participant Interviews

I conducted semi-structured interviews to gain an understanding of the decision-making processes at CAISO, the actual experiences of those who participate in CAISO stakeholder processes, and the experiences of those who are now within the EIM footprint (see interview protocol provided in Appendix B). The protocol included questions on experience, the process for decision-making, stakeholder groups, and influences. The protocol was revised twice during the process as I gained experience with the issues to ensure the questions were relevant to both the respondents and my research. The protocol used a flexible guide to encourage respondents to share their view of how decision making occurs and questions were adjusted or improvised to accommodate the widely varying experience and expertise of the respondents (Lindlof & Taylor, 2011, p. 200).

Initial interviews were selected through repeated conversations with field experts, including our research advisory committee, and purposive sampling (Lindlof & Taylor, 2011) to recruit interviewees across the different stakeholder sectors as identified in other RTOs and the CAISO Board nomination process. Subsequent interviews were identified through referrals from interviewees and included in the study to the extent they achieved our purposive sampling objectives. As the importance of the EIM case emerged and a group of EIM Transitional Committee members was named the sampling criterion was expanded to include a range of individuals participating on the Committee and perspectives from entities that do not actively participate in CAISO processes, but are now within the service area of the EIM and therefore, in a position to consider whether or not to engage with the EIM market.

Of the 21 interviews I conducted, two were in-person and 19 were by phone. Each interview was approximately one hour and all interviews were recorded, professionally transcribed, and scrubbed for accuracy, resulting in 419 single-spaced pages of interview data. The interviews are distributed across six stakeholder groups and include six EIM Committee members and six individuals from organizations that are not currently participating in CAISO or EIM organized markets (Figure 4.1). A more expansive data set would include current staff from CAISO and Bonneville Power Administration, who unfortunately declined to participate in the study. CAISO perspectives were obtained from former CAISO staff members.



**Figure 4.1. Distribution of Interviews Across Stakeholder Sectors**

### Observations

CAISO staff facilitated the stakeholder engagement processes used to develop the EIM Transitional Committee Charter, the deliberations of governance alternatives by the Committee, and the nomination process used to seat the EIM Governing Body. These

processes, though modified to encourage broader regional participation, followed CAISO's standard procedures for engaging stakeholders. Furthermore, each of these processes followed, to the extent applicable, CAISO records availability and open meeting policies. The initiative and meetings were announced through CAISO market notices and the meetings were open to public participation either in-person or through WebEx or teleconference with the exception of topics appropriate to executive session, working groups, and Nominating Review Committee discussions. Because stakeholders are located in a wide geographic area and several meetings are held each week, many stakeholders participate via teleconference or WebEx. Observation of stakeholder interactions in these meetings provides an opportunity to "create a record of communication" by "describing and interpreting the observable relationships between social practices and systems of meaning" (Lindlof & Taylor, 2011, p. 134) and gain insight into the social skills and discursive strategies used to either introduce or block change, as well as the iterative nature of collaboration as a social accomplishment (Hardy et al., 2005; Moulton & Sandfort, 2017).

For my research, observations were selected to include each of the common CAISO decision-making venues including Board of Governors meetings, Market Surveillance Committee meetings, stakeholder engagement processes, and inter-agency workshops. Additional focused attention is given to the EIM Transitional Committee meetings. These data consist of 27 field observations including 10 of the 13 public EIM Transitional Committee meetings. Of these observations, one is an on-site visit to a Board of Governors meeting at the CAISO Offices in Folsom, California, another is an on-site visit to an EIM Transitional Committee meeting in Portland, Oregon, one is an on-site

visit to an EIM Regional Issues Forum meeting in Boise, Idaho, and the remaining observations are via WebEx or publicly available audio recordings. These observations are documented in 261 single-spaced pages of field notes and 718 double-spaced pages of professional transcription of four regional grid operator and governance workshops (see summary of field observation data in Appendix C).

### Document Review

Throughout the initiative, stakeholder input was solicited through an iterative process of developing straw proposals, facilitating discussion in public meetings, providing opportunities for oral and written comments, responding to comments, and revising proposals. Additionally, CAISO staff provided regular informational updates and briefings on special topics for the Transitional Committee. All briefings, presentations, proposals, and draft charters were made available through the CAISO website (see Appendix D for a list of documents analyzed in this study). In the stakeholder processes, communication performances and practices occur as an iterative back and forth between meeting participation, written proposals, presentations, written stakeholder comments, and written responses. These documents act as “aids in speech acts” and convey communication practices among stakeholders (Lindlof & Taylor, 2011). The documents analyzed in this study include reports and presentations that provide an accounting of agency and stakeholder positions, and primary stakeholder comments and interviews that provide first-person descriptions of their own communications.

### **4.4. Data Analysis and Interpretation**

Taken together, the interviews, meeting observations, foundational documents, proposals, stakeholder comments, responses to comments, and other texts provide insight

into the communicative process as it occurs (Lindlof & Taylor, 2011; Tracy, 2013). Consistent with a qualitative approach, my data analysis is iterative, alternating between emic (emergent) analysis of the data and etic (external) uses of existing models and theories, and was conducted along with data collection. I used two complementary methods for making sense of the data. First, the interviews, stakeholder comments, and fieldnotes were coded through a cyclical process. Second, other documents were analyzed through progressive focusing to generate issues and themes.

The data analysis for the interviews, comments and fieldnotes used grounded theory and the constant comparative technique, in which meanings and claims are grounded in codes and categories that emerge through cumulative coding cycles and analytical memo writing (Charmaz, 2003; Glaser & Strauss, 1967). In this method, data are reviewed line-by-line and assigned a code, which is a word or short phrase, that identifies the “summative, salient, essence-capturing and/or evocative attribute” of a portion of data (Saldaña, 2009). My primary-cycle coding focused largely on the use of open, process, and in vivo coding to “fracture” the data. Open coding serves as a first step in identifying similarities and differences in the data and naming my interpretation of the data (see examples in Table 4.1). Process coding identifies action and is especially appropriate for understanding ongoing interactions. In Vivo coding is based on actual language in the data and is especially appropriate for understanding worldviews. Simultaneous coding is used when the content suggests multiple meanings. My primary coding cycle resulted in 95 codes related to authority and social skills.

**Table 4.1. Primary Coding Examples**

Type of Code	Interview Text	Code
Open	Unfortunately the ISO stakeholder processes are usually focused on narrow issues. One of the frustrations- and people involved in energy policy in California who've been doing it a long time, most of them will agree- that what we've had is a bunch of disjointed policy decisions without taking a broad overview and a lot of decisions that work at cross purposes and unintended consequences.	Stakeholder Process Narrow
Process	They've been extremely creative in looking at how to apply demand response and demand side management resources as a way to deal with the variability on the distribution grid and on the load side as part of their portfolio of ways to integrate large amounts of renewables. Finally perhaps the most important thing that they have done was extending their Energy Imbalance Market to the rest of the West.	Crediting CAISO
In Vivo	They're in the middle of the market simulations they're doing right now to make sure that the interactions between PacifiCorp's controls and Cal ISO's system controls can operate the system automatically and deal with settlements that are going to be necessary in such a rapidly moving market. This is creative stuff. This is <b>game changing</b> stuff.	Game Changing
Versus	What has been more influential, in my opinion, about how decisions get made is the ISO has really had to engage more heavily with the state regulatory bodies- such as the CPUC, and the Energy Commission, Air Resources Board, and things like this. Sometimes in order for the ISO to get what it wants on certain issues, it has to give a little on what the state agencies want, and that's not always a good thing. It detracts from the independence a little bit.	RTO Independence vs. Coordination with State Regulators

Subsequent cycles of coding compared and reorganized the primary codes according to similarities or patterns to create categories that facilitate the analysis of the connections among codes and the development of themes, concepts, and claims. These cycles of coding also drew on theoretical constructs and were guided by my research questions relating the theoretical constructs to the broader questions for the study. These coding cycles resulted in 24 subcategories and 11 categories that were grouped into the four themes presented in Chapters 5 and 6 (see codebook in Appendix E). To strengthen the validity of the analysis, I went back to the data throughout the project to see if there were any instances that contradicted the developing results (Lindlof & Taylor, 2011, p. 278). For example, my initial analysis identified “expansion of governance” as important to a wide range of stakeholders. However, in subsequent analysis it became evident that the taken-for-granted meaning behind these statements differed among stakeholders and the codes were divided between “transformation” and “constitution” of the market. Finally, I used NVIVO software to maintain the code list, organize codes into categories, and associated concepts and themes. Classification tables were created to allow the data to be analyzed by stakeholder sector, organization, or CAISO-affiliation status.

Data collection and analysis ended following the seating of the EIM Governing Board in July 2016, the on-site observation of one of the first Regional Issues Forum meetings in August 2016, and the California Governor’s announcement that a recommendation for expanding CAISO to a broader multi-state region would be delayed. Additionally, after 32 months of observations, interviews, document review, and preliminary analysis, I decided the research had achieved theoretical saturation and that additional data collection and analysis had reached a point of diminishing returns (Tracy,

2013) In particular, after 21 interviews, the data provided rich contributions to my research and little new data seemed to emerge regarding my research questions.

#### **4.5. Conclusion**

In this chapter, I review the case study approach and qualitative methodology used in my research. The data collection and analysis process allowed me to systematically explore how the policy implementation process unfolded in practice and gain insight into the taken-for-granted understandings of stakeholders as they worked together to form a new governance structure. These insights are described in Chapters 5 and 6.

## CHAPTER FIVE: TRANSFORMING EXISTING AUTHORITY

Policy implementation involving coordination or collaboration among organizations often involves ambiguous authority relationships or competing sources of authority (Koschmann, 2012; Moulton & Sandfort, 2017; Ostrom, 2011). In such cases, policy change requires efforts to overcome or transform existing authorities that would otherwise prevent collaboration (Koschmann & Burk, 2016). Sources of authority include public policies, economic incentives, norms or beliefs.

The analysis of stakeholder interactions presented in this chapter identifies how stakeholders worked to transform a dynamic of individual jurisdictional interests and mistrust among actors in the West and opened the possibility for collaboration and expansion of the EIM. The first section of this chapter identifies the values and jurisdictional relationships that provide a rationale for the long-standing resistance to regional organized markets in the Western Interconnection. This section demonstrates that the rationale for stability persisted in both the CAISO and the non-RTO regions and across differences in local circumstances, preventing collaboration. The second section introduces the concept of a *boundary object* as a way of understanding stakeholder interactions and demonstrates how stakeholders in the West engaged in three discursive strategies to overcome and transform the existing sources of authority: 1) shifting the discourse, 2) symbolic contrast, and 3) boundary spanning. These strategies made collective action possible by allowing diverse interpretations of EIM governance, but

were not sufficient to enable durable policy change. To enact a long-term governance structure, stakeholders had to explore these alternative interpretations. Chapter 6 examines the rationale and external events that provided legitimacy for a new EIM governance structure.

### **5.1. Existing Authorities that Prevent Collaboration**

Understanding how authority is negotiated among stakeholders involves investigating how particular sources of authority are created or legitimated and how established authoritative influences are overcome or transformed (Feldman & Quick, 2009; Koschmann & Burk, 2016; Moulton & Sandfort, 2017). This research extends these ideas of authority as a negotiated and emergent phenomenon that involves transforming, negotiating, and co-creating authority to the context of multi-organizational regulatory policy implementation.

The long-standing resistance to organized markets in the Western Interconnection reflects not only a fundamental tension between the energy system values of policymakers in the West, but also a shared mistrust of multi-state electricity governance and a resistance to ceding additional authority to FERC. The first theme that emerged from my data involves this dynamic of mistrust and how a narrative that jurisdictional independence serves energy policy goals influences collaboration. Diverse energy system values and complex jurisdictional relationships have prevented states in the West from forming regional organized markets, reinforced the boundary between CAISO and non-RTO regions in the West, and reinforced a shared mistrust of multi-state RTOs. However, this dynamic is being challenged by clean energy policy, innovative technology, and market changes.

### Diverse Energy System Values

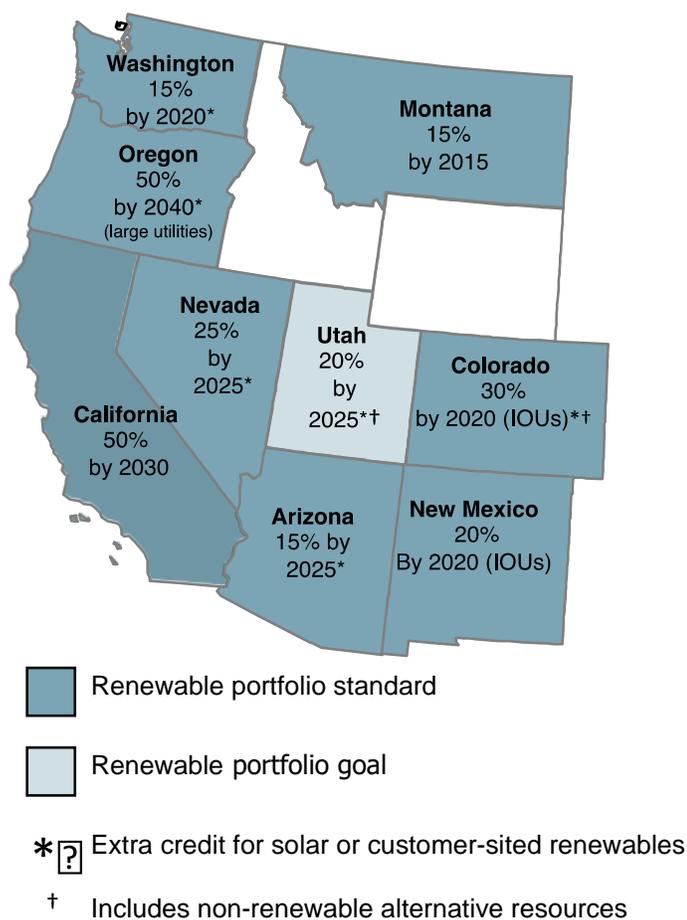
Western states, municipalities, electric cooperatives, and federal power marketing authorities and the constituents that they serve have diverse energy system values. The following exchange regarding the shifting economics and over-generation problems associated with integrating variable renewable resources reflects some of these differences:

If California gets into an over-generation situation in the afternoon and they are paying more for solar as a source, then when solar decreases they will need replacement energy and they are going to have to pay more for that. What is the benefit to the ratepayer of paying such high prices?

(Field Observation, 11/17/15)

This statement highlights the conflicting priorities among stakeholders in the West as they work to balance affordability, reliability, and sustainability within the electricity system. Policymakers across the West who see traditional thermal generation, such as coal, as a preferred approach for maintaining affordability do not share the clean energy policy goals enacted by the California Legislature.

Across the West formal energy policy goals are diverse (Figure 5.1). The West has some of the most aggressive clean energy policies in the United States. California and Oregon require 50% of electricity to be procured from renewable resources by 2030 and 2040, respectively (California Energy Commission, n.d.; Oregon Department of Energy, n.d.). California has an energy-resource *loading order* that gives preference to renewable resources over fossil-fuel generation and a greenhouse gas reduction mandate (California Energy Commission, n.d.; State of California, 2003). Oregon is requiring its two major investor-owned utilities to phase-out coal-fired electricity generation from in-state and out-of state sources by 2030 (OR SB1547, 2016).



**Figure 5.1. Renewable Portfolio Standard Policies in the West**

*California and Oregon have some of the most aggressive RPS policies in the U.S. In contrast, Idaho and Wyoming are among 13 states that do not have an RPS goal or mandate.*

Source: Adapted from NC Clean Energy Technology Center, n.d.

In other parts of the West, regulators, publicly owned utilities, and other stakeholders are focused on “least cost/least risk” energy policy and Idaho and Wyoming are among 13 states that do not have an RPS goal or mandate (NC Clean Energy Technology Center, n.d.). In many of these jurisdictions, it is not simply that clean energy is not a policy priority, but rather that regulators and policymakers have established

affordability and reliability as energy policy goals that are reflected throughout their decision-making processes. For example, a state regulator characterized the energy policy values in the West in this way: “...Cost is, you know, 95 percent the driver of energy policy on the part of state commissions in the Western United States, outside of California” (Respondent 207). A public power stakeholder also noted that for public power the mission is “energy at the lowest cost” (Field Observation 10/01/2014). In other words, regulators and policymakers in California are primarily focused on clean energy, whereas in much of the West regulators and policymakers are primarily focused on the affordability and reliability of the electricity system.

Furthermore, some regions of the West are heavily dependent on hydroelectric generation, which has different environmental impacts than thermal generation. Although hydropower lacks the carbon and air pollution impacts associated with thermal generation, these resources are typically limited or not included at all in state clean energy policy goals because of the competing demands on water resources. In the Northwest Power Pool, hydropower accounts for nearly 50% of the generating capacity as compared to only 8% of generating capacity in the U.S. (U.S. Energy Information Agency, 2016a). These resources are used for multiple purposes in addition to electricity generation, including irrigation, fisheries, flood control, and recreation, and are subject to a wide range of state and federal policies. Although these other uses and regulations do not prohibit hydroelectric generation from participating in organized markets, they are often cited as a barrier to effective participation. A Northwest stakeholder expressed this concern as follows:

I think there's just some concern that could you really put a complex system like that into a market and get much out of it. Because it is already

so heavily coordinated and controlled by all of these other things.  
(Respondent 216)

Specifically, for jurisdictions that rely on clean and flexible hydropower, organized markets lack many of the environmental and economic benefits they provide elsewhere and raise unique concerns about the ability to maintain operational flexibility for other uses.

The distinct approaches to energy policy across the West contribute to division and mistrust among stakeholders. Furthermore, as explained below, underlying the policy preferences in both California and in non-RTO regions is tension around complex jurisdictional relationships and a belief that maintaining jurisdictional independence serves the public interest.

#### Jurisdictional Relationships

Both stakeholders within and outside of California express concern about engaging in a multi-state RTO and ceding additional authority to FERC. A long-time observer of CAISO pointed out that since the founding of the organization the resistance to expansion has been mutual: “The original thought was that this ISO thing was going to be west-wide. Nobody liked that idea outside of California. Few people inside California liked it either” (Respondent 209). Many stakeholders across the Western Interconnection believe that their own political and market interests are served by retaining jurisdictional independence, rather than engaging in the collective activities of an EIM or an RTO. This can be seen in the resistance among states to engaging with each other; in the divisions across federal, state, and local levels of regulatory authority; and in the inherent risks of engaging in a more dynamic governance system.

Regulators, policy makers, utilities, and other stakeholders in the non-RTO regions of the West have concerns about relinquishing state or local control and engaging with states that have very different energy policy goals. These stakeholders commonly refer to a preference for “local control,” “homegrown” solutions, and “anything but California.” Many stakeholders suggest this resistance to collective action is driven by concerns that California would dominate any multi-state governance structure because it could control a decision-making mechanism based on electricity load or population. Other stakeholders explained that lingering tensions from the 2001 energy crisis continue to have salience throughout the West and noted the wide differences in retail electricity prices across the region. While many western states, including Idaho, Washington, and Wyoming have some of the lowest average retail electricity prices in the U.S., California has some of the highest average retail prices (U.S. Energy Information Agency, 2016b). In particular, stakeholders outside of CAISO are concerned that relinquishing jurisdictional independence would open them to political and economic risks from engaging with jurisdictions that not only have different energy system values but also have the ability to control the decision making process.

However, another important barrier to collective action in the West is the fundamental tension between public power utilities and FERC. Investor-owned utilities and publicly owned utilities are subject to different regulatory structures.<sup>11</sup> Investor-owned utilities are already subject to rate regulation through state utilities commissions and FERC. In contrast, most public power utilities are exempt from state and federal rate

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<sup>11</sup> For the purposes of this paper, publicly owned utility or public power utility will be used to denote municipal, state, and federal electric utilities, rural electric cooperatives, and federal power marketing administrations.

regulation. For these utilities, joining an organized market means relinquishing some control to an RTO that is authorized by FERC and becoming subject to FERC rate review. It also means engaging in an organization that is influenced by state regulators. One long-time participant in CAISO processes observed that: “The biggest boogeyman in the room is FERC. They [California public power utilities] don’t want to be FERC jurisdictional any more than Bonneville Power does” (Respondent 213). These concerns have been a significant barrier to expanding organized markets in the West.

The ownership pattern within CAISO stands in sharp contrast to the importance of public power in non-RTO regions of the West (Table 5.1). CAISO is designed around the three large investor-owned utilities in California and a partially restructured industry.<sup>12</sup> Within CAISO, the three largest investor-owned utilities manage more than 80% of the electric supply and public power utilities manage only 8% (based on analysis of U.S. Energy Information Agency, 2014). In contrast, the non-RTO regions of the West are shaped by public power and a vertically integrated industry.<sup>13</sup> Outside of CAISO, public power utilities manage 48% of the electricity supply in the West (based on analysis of U.S. Energy Information Agency, 2014). Of the six largest public power utilities outside of CAISO, two are in California and one is a state agency. Public power also includes two federal Power Marketing Administrations that manage transmission and market

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<sup>12</sup> As part of the industry restructuring in the late 1990s, California required divestiture of generation assets. However, following the energy crisis of 2001 this requirement was amended and investor-owned utilities can own or contract for generation. California now has a hybrid industry structure in which utilities purchase 41% of generation output from independent power producers and own the remaining generation (Borenstein & Bushnell, 2015).

<sup>13</sup> Outside of California, the industry structure in the West is mostly vertically integrated with companies that own generation, transmission, and distribution assets. The extent of independent power ownership of generation in the West ranges from 27% in Idaho to 6% in Wyoming and is notably less than the more than 40% in California (Borenstein & Bushnell, 2015).

**Table 5.1. Comparison of Utility Ownership in the West (2014 data)**

CAISO		Non-RTO	
<b>TOTAL</b>	<b>244,405</b>	<b>TOTAL</b>	<b>534,260</b>
<b>Share of CAISO Sales<sup>1</sup></b>		<b>Share of Non-RTO Sales<sup>1</sup></b>	
<b>Investor Owned Utilities and Power Marketers</b>	<b>92%</b>	<b>Investor Owned Utilities and Power Marketers</b>	<b>52%</b>
Pacific Gas & Electric Co	42%	PacifiCorp	11%
Southern California Edison Co	33%	Portland General Electric Co	5%
San Diego Gas & Electric Co	7%	Public Service Co of Colorado	5%
Noble Americas Energy Solutions	3%	Arizona Public Service Co	5%
Constellation NewEnergy	2%	Puget Sound Energy Inc	4%
Shell Energy North America	2%	Nevada Power Co	4%
Other Investor Owned	3%	Other Investor Owned	17%
<b>Public Power Utilities</b>	<b>8%</b>	<b>Public Power Utilities</b>	<b>46%</b>
City of Santa Clara	1%	Emerald People's Utility District	5%
Modesto Irrigation District	1%	Salt River Project	5%
City of Anaheim	1%	Los Angeles Dept. of Water & Power	4%
City of Riverside	1%	Colorado River Commission of NV	2%
City of Vernon	<1%	Sacramento Municipal Utility District	2%
City of Pasadena	<1%	Seattle City Light	2%
Other Public Power	2%	Other Public Power	25%
<b>Federal Power Marketing Administrators</b>	<b>0%</b>	<b>Federal Power Marketing Administrators</b>	<b>2%</b>
		Bonneville Power Administration	1%
		Western Area Power Administration	1%
1. Based on annual GWh sales. Does not include behind the meter, customer sited, or adjustments. Source: Data from Form 861 (U.S. Energy Information Agency, 2014)			

power primarily to public utilities. The Bonneville Power Administration and the

Western Area Power Administration manage 2% of electric supply in non-RTO regions

of the West (based on analysis of U.S. Energy Information Agency, 2014). These divisions across federal, state, and local regulatory jurisdictions create additional barriers to collective action.

Finally, in addition to the jurisdictional tensions among western states and between public power and FERC, state and local officials across the region share concerns about FERC limiting their authority as organized markets evolve. CAISO is authorized not only by FERC, but also by California state statute and it has a Board of Governors appointed by the Governor of California and confirmed by the California State Senate. The authorization in state statute is unique and makes CAISO more like a quasi-governmental agency than other RTOs (see Dworkin & Goldwasser, 2007). Although California statute originally contemplated the potential expansion to a west-wide RTO, a change in CAISO governance would require new legislation. In practice, this has led to a tight relationship between CAISO and California policy-making processes and a perception that jurisdictional independence facilitates California's aggressive clean energy policy goals. For example, one CAISO stakeholder stated:

...there are ways in which once you go down that path [to a multi-state RTO] – at least it's definitely my perception and the perception of others – that it limits the flexibility of states to pursue their state energy policies. Because those markets tend to try to treat everything on exactly the same basis to the extent they can, and sometimes the rules that work for generators don't work as well for demand response or for renewables or what have you. (Respondent 201)

As this response highlights, many stakeholders within California are skeptical of expanding CAISO to a multi-state RTO not only because it would involve sharing control with other state regulators, but also because the fuel-neutrality norms for market design, which require a level playing field for all resource types, would be more difficult to

negotiate in a multi-state RTO. Stakeholders within California repeatedly expressed concern that expanding to a multi-state RTO or allowing autonomous decisions by the EIM Governing Body would be ceding additional authority to FERC to arbitrate conflicts. In particular, stakeholders are concerned that relinquishing jurisdictional independence would open CAISO decisions to more frequent challenges in FERC proceedings and the courts, thereby limiting progress toward clean energy policy goals.

These concerns about engaging in a more dynamic market and FERC regulation are also central to the perspective of many jurisdictions outside of CAISO. A Northwestern stakeholder used a multi-state RTO in the Eastern Interconnection as an example of the perceived political and market risks associated with engaging in an RTO. From this perspective, over time as market rules have evolved, utilities have been caught in the middle of a conflict between the RTO and state and local officials over control of resource procurement and how they ensure that there are adequate energy resources in the system (Respondent 221). This example highlights one of several policy issues for which RTOs have blurred the traditional divides between federal, state and local jurisdictions. For these jurisdictions, stakeholders are concerned that relinquishing jurisdictional independence would risk their ability to maintain affordable and reliable energy policy goals.

#### Rationale for Continued Fragmentation in Energy System Governance

These examples highlight that engaging in an organized market inherently involves risks because market rules evolve over time and it is difficult to condition participation on a specified economic benefit, guaranteed affordability of rates, or protection of certain state and local authority. Individual utilities in the Western

Interconnection vary in their market positions, administrative capacities to engage in the complexity of an organized market, and assessment of the economic and political risks of engaging in a multi-state governance structure. However, many regulators, policymakers, and utilities share a belief that jurisdictional independence serves the interests of their constituents by furthering explicit energy policy goals and this provides a rationale to justify decisions not to engage in a multi-state EIM or multi-state RTO.

## **5.2. Transforming Existing Authority**

The social negotiation of authority involves stakeholders in a process of interpreting what is and what is not possible. When ambiguous or conflicting authorities exist, actors make decisions about the relative importance of different authorities as they create and legitimate courses of action. In practice, researchers have observed that boundary objects arise directly from such conflicts and serve to enable cooperation across intersecting communities (Bowker & Star, 1999). Central to understanding cases where actors are coordinating work without reaching consensus is an examination of the interpretive flexibility of a particular material thing, issues, or policies. Stakeholders must explore and discuss the symbolic boundary formed by different meanings before they can collaboratively construct a shared understanding of the object and develop a legitimate course of action (Nelson-Marsh, 2017). Thus, the social practice of boundary spanning involves an ability to create a shared understanding while maintaining elements of alternative interpretations (Bowker & Star, 1999).

The second theme that emerged from my data involves the loosely structured meaning of an EIM and the alternative interpretations that allowed stakeholders to begin engaging in the initiative. The Western EIM is a unique and complex set of material

practices developed through diverse venues over the course of nearly a decade. These material practices have been reified through various taken-for-granted meanings among stakeholders in the West. Thus, my analysis of stakeholder interactions conceptualizes the EIM as a boundary object and identifies how stakeholders worked to transform the existing authorities that have prevented collaboration and to develop alternative interpretations for how EIM implementation should proceed.

Specifically, CAISO, state regulators, utilities, other stakeholders, and the Committee needed to transform long-standing beliefs that jurisdictional independence served the public interest in order to open the possibility for stakeholders to engage in a regional initiative. This analysis demonstrates that they did this using three discursive strategies: 1) shifting the discourse, 2) symbolic contrast, and 3) boundary spanning.

#### Shifting the Discourse

The EIM was initiated in early 2013 through a bilateral agreement between CAISO and PacifiCorp, rather than a broad agreement among stakeholders and market participants. I suggest that this was a strategic action intended to trigger a critical shift in the discourse around organized markets in the West. Previous failed market collaborations had attempted to resolve governance, market design, and operational issues before moving forward with an agreement to form a market. These initiatives suffered from a deficient discourse that revolved around uncertainty about market participation, design, and operation, all of which affect the distribution of benefits and costs (Cifor et al., 2015). These uncertainties increased concerns about economic and political risks and reinforced the authority of jurisdictional independence.

The CAISO-PacifiCorp agreement shifted this discourse by identifying major market participants, designating CAISO as the market operator, and proposing a relatively equal sharing of benefits between CAISO and PacifiCorp. This strategic move framed the EIM as a dynamic, multi-state market that generates economic and environmental benefits.

The CAISO-PacifiCorp agreement structured the EIM initiative to reflect certain interests by privileging the position of a large investor-owned utility and marginalizing the Bonneville Power Administration. PacifiCorp is the largest investor-owned utility in the non-RTO region of the West and the largest transmission owner and operator in the West. It operates in six states and is one of several businesses managed by Berkshire Hathaway Energy. In other words, PacifiCorp has experience working with multiple state regulatory commissions, was already subject to FERC rate regulation, and its parent company has experience operating a business that participates in an RTO.<sup>14</sup> By engaging in the EIM, PacifiCorp brought the issue of organized markets to the fore for regulators in six states.

The Bonneville Power Administration is also an important electricity system stakeholder in the West. It owns and operates three-quarters of the transmission in the Northwest, generates electricity primarily from hydropower, and is not subject to state or local regulation. So, although Bonneville Power Administration faces limited economic or political pressure to engage in regional markets, its dominant position as a transmission operator means that its involvement is necessary for the proposed EIM. The

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<sup>14</sup> Berkshire Hathaway Energy also manages NV Energy, which was the second utility to join the EIM, and MidAmerican Energy, which participates in the organized market operated by the Midcontinent Independent System Operator.

CAISO-PacifiCorp agreement not only aligned two of the largest balancing authorities in the West, it marked PacifiCorp's withdrawal from an alternative EIM initiative that it co-chaired with the Bonneville Power Administration.<sup>15</sup> This led to a situation in which Bonneville Power Administration was engaged in technical implementation, but marginalized in governance discussions.

In addition, the CAISO-PacifiCorp agreement bifurcated the EIM technical and governance implementation efforts and defined the question of governance in terms of the relationship between the EIM and CAISO. Technical implementation proceeded through conventional CAISO stakeholder processes and was relatively uncontroversial, whereas, governance was deliberated through a newly created Transitional Committee. Through this separation of the issues, the EIM mechanism became operational after only four Committee meetings and more than a year and a half before the EIM Governing Body was appointed.

These strategic actions framed the EIM as a dynamic, multi-state market. It brought the expansion of organized markets to the attention of regulators and stakeholder across six states, yet was always described as an initial step, with expansion of the EIM being fundamental to the design. For example, in a Board of Governors meeting a stakeholder emphasized that, "We hope and expect that other entities in the West will follow along and help expand the market in the coming months and years" (Field Observation 9/18/14).

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<sup>15</sup> Bonneville Power Administration continued this exploratory initiative in various forms through December of 2015. However, the withdrawal of PacifiCorp, and subsequently other investor-owned utilities, shifted the scale and resource mix of the initiative so that it was no longer economically viable.

These actions also framed the EIM as a market that generates economic and environmental benefits. This framing became important in shifting the discourse and was reiterated in each Committee meeting, and in many other venues across the West, as CAISO reported on technical implementation progress, realized net benefits, and reductions in carbon emissions. As an example, the conversation below highlights how this framing was used to shift the discourse:

SPEARKER 1: We hope and expect that other entities in the West will follow along and help expand the market in the coming months and years...the interregional benefits [of the EIM] are highly dependent on available transmission capacity, so we worked closely with CAISO and Bonneville Power Administration to maximize these benefits...

SPEARKER 2: Thank you...We're all at the beginnings of something very good for consumers in the West.

SPEAKER 3: This particular initiative is transforming the way this grid is going to operate and we will have a more integrated grid as a result of this effort. I was talking this morning with the Northwest Power Pool and they are taking action because things around them are changing and they can't sit it out and part of that is from the leadership from CAISO, PacifiCorp and NV Energy.

(Field Observation, 9/18/14)

This exchange highlights the expectation that the EIM will generate benefits and implies that this will translate into more affordability or more sustainable energy for consumers.

This message was reinforced each time CAISO reported on the economic and environmental benefits of the EIM and it became a dominant narrative despite ongoing settlement difficulties for utilities. It also points to how the "leadership" from CAISO and the Berkshire Hathaway companies has reoriented discussions about organized markets across the West and to the importance of further expanding the market. Finally, it

highlights Bonneville Power Administration's involvement as another indicator of the shift in the long stalemate around organized markets.

The framing of the EIM around teamwork and benefits worked to shift the discourse regarding potential economic risks of regional engagement and to overcome the authority of jurisdictional independence.

### Symbolic Contrast

In addition to shifting the discourse about the economic risks of regional engagement, state regulators and policymakers needed to overcome existing authoritative narratives about the political risks of regional engagement. They did this in conversations about *grid modernization* and *leading the transition to renewable energy*. Specifically, certain regulators and policymakers began to contrast the existing decentralized grid with new technologies and regional coordination approaches that could better serve the public interest. Through this practice of symbolic contrast in which the meanings for things are derived through social interaction and modified by contrasting taken-for-granted assumptions with new potential meanings actors transformed the dominant authoritative narrative about political risks.

First, state regulators and policymakers began to describe the Western Interconnection as “Balkanized” or as a “feudal kingdom” and contrasting it to the “21<sup>st</sup> Century” technologies provided by RTOs. The negative characterizations of the Western grid emerged from repeated interactions across the West, frustration with the inefficient use of grid infrastructure, difficulties in building transmission lines, and failures of past attempts to introduce organized markets. As one public interest advocate stated, “In the Western United States the grid is Balkanized...we have a system that is just crazy...it's

slow...it's dumb" (Respondent 215). Whereas, the positive characterizations of RTOs result from the proven ability for advanced information, communication, and control system technologies to improve economic efficiency and reliability. For example, state policymakers and regulators describe the potential benefits of regional integration of the electricity system this way: "it just really is time to move the grid operations to the 21<sup>st</sup> Century" (Field Observation 6/16/16) and "...It's just a piece of software, you know? Let's just start using it" (Field Observation 5/6/16). This symbolic contrast not only associates the authoritative narrative of local control with outdated and dysfunctional approaches; it also de-emphasizes the political and market significance of the EIM by focusing attention on the ability for its advanced information, communication, and control system technologies to improve economic efficiency and reliability.

Second, regulators and policymakers began to describe the challenges of balancing California's resource mix in terms of "overgeneration risks" and as a potential "political and economic failure" and contrasting it to the potential to "lead the transition to renewable energy" through regional collaboration. The negative characterizations of the current challenge are tied to the political risks associated with curtailing wind or solar resources. California's clean energy policies and transmission investments have been designed to promote rapid growth of renewable resources and green economic development within the state. Many in California see its role as leading the transition to a low-carbon economy by acting as a model for others. As one California policymaker noted: "We can certainly act as a model or example of how you can maintain a sustainable economy and grow the economy while addressing climate issues" (Field Observation 7/26/16). However, now that renewable resources are a significant share of

the resource mix and are at times exceeding what the system can use, this construct of leading by example is being challenged. As a state official explained:

We clearly don't want to curtail that level of generation, we clearly don't want to throw away those renewables that we've spent so much time and effort and cost putting on the system, and so we're going to have to attack this across the spectrum.

(Field Observation 9/18/14)

Without policy and institutional changes, available generation from renewable resources will have to be turned off during certain periods because it exceeds what can be managed on the system. The existing infrastructure, including current and anticipated investments in renewable generation, can be used more efficiently if the footprint is expanded to take advantage of geographic, load, and resource diversity. Therefore, California policymakers and regulators have increasingly focused on their role in leading the transition to low-carbon economy, redefining how they measure success, and engaging regionally. The following comment reflects this effort:

...California is one percent of the world's greenhouse gas emissions...we cannot solve things ourselves...it's sort of game over unless we move out of our comfort zone of California and reach out...Idaho is like 82 percent renewable. Well, that's not our definition. A lot of it's large hydro. I mean, but frankly, again, you can't get much better from a greenhouse gas perspective.

(Field Observation 7/26/16)

This symbolic contrast associates the authoritative narrative of local control with inefficiency and reliability risks and associates regional integration with furthering aggressive clean energy policy goals.

Through these uses of symbolic contrast, regulators and policymakers worked to provide other decision makers with the necessary authority to improve collaboration and make it difficult for them to continue the status quo.

### Boundary Spanning

The EIM is described most often as an extension of existing real-time market services to other balancing authorities in the West. However, it is a unique and highly technical construct that has evolved from discussions throughout the West. An EIM was initially explored in studies by research institutions and regional governance entities (e.g., Cochran et al., 2013; Milligan et al., 2013; Porter et al., 2012; Samaan et al., 2013). It was further developed through initiatives spearheaded by the Western Interstate Energy Board and the Northwest Power Pool and proposals developed by various RTOs including CAISO and the Southwest Power Pool. It is therefore not surprising that differently situated stakeholders express a range of alternative interpretations of the EIM. Through the social practice of boundary spanning, strategic actors explored these alternative interpretations, created space for diverse perspectives, and worked to transform authorities that prevented collaboration by allowing stakeholders to understand how their particular interest connect to the EIM formed by CAISO and PacifiCorp.

In discussing the conflicting views regarding the EIM, one stakeholder drew a distinction between the EIM as a project to create a clearly defined market product and the EIM as a policy to promote regionalization of the grid by asserting:

It's hard for people to understand EIM as a project, but it is a project...EIM is not—they call it an initiative, EIM is not a policy (Respondent 219)

I suggest that this is a useful distinction in understanding the alternative interpretations of the EIM and I identify boundary spanning across four types of local interpretations reflecting this distinction. These alternative interpretations do not represent fixed coalitions in competition with each other to drive decision making, but rather represent different meanings that stakeholders explored as they sought to engage in cooperative work. For example, CAISO used all four seemingly contradictory local interpretations as it engaged with various stakeholders.

#### Discrete Product

In many venues, the EIM is described in terms of its differences from an RTO. For example, at the first Committee meeting, CAISO staff explained that, unlike an RTO, the EIM requires no critical mass, has no exit fees, is low-cost and low-risk, and does not affect balancing authority autonomy (Field Observation, 7/1/14). These explanations focus on the aspects of EIM market design that protect state and local autonomy to drive reliability, affordability, and clean energy decisions. These explanations are important because retaining this authority is critical for many potential EIM stakeholders. However, these explanations do not convey the complexity of the EIM market design, but rather characterize the EIM as a discrete market product that utilities can voluntarily chose to use or not use.

#### Integrated Product

In other venues, the EIM is described as tightly integrated with CAISO's other organized markets. For example, in a stakeholder meeting, an experienced CAISO participant questioned how the EIM would work:

SPEAKER 1: CAISO operates three markets; the EIM is not a separate market, it is participation in the real time markets. Does the committee see this as one market? Or is it separate? Or might that change in the future?

SPEAKER 2: The Committee understands it is an extension of the real time market and that is why we have considered how difficult it would be to separate out. We recognize they are linked and a governance model would consider this...because we do know they are not easily separable.

(Field Observation 1/12/15)

These explanations focus on aspects of EIM market design that are highly interdependent and require market rules across products be kept compatible. These explanations are important because ensuring the fully organized markets continue to function efficiently and reliably and California's investment in market infrastructure retains its value is critical for incumbent CAISO participants and many California stakeholders. However, the EIM market design work is highly technical and described by experienced stakeholders as "wonky" or as "the deep end of the pool." Furthermore, it was carried out in a separate stakeholder process meaning that somewhat different action fields formed around the technical and governance implementation efforts. As a result, the functioning of the EIM as a highly integrated market product was not well understood among stakeholders. For example:

SPEAKER 1: EIM is just on the hour – this is a full on day-ahead market.

SPEAKER 2: I don't understand how they operate side by side.

SPEAKER 1: Imbalance is a product within the ISO. It's not like being full in. If you are a full ISO customer, it is like turning over the keys. Imbalance is a separate market.

SPEAKER 2: If you are in hourly, what is left?

SPEAKER 1: In EIM you don't have to bid everything in. With ISO you are fully in. It is almost as if you are part of their balancing authority.

SPEAKER 2: You are still operating your plants technically, but they tell you what to do.

(Field Observation, 11/17/15)

Many stakeholders were unclear about the relationship between the EIM and CAISO's interdependent market framework. This confusion was compounded by the fact that other RTOs started their organized markets by operating an autonomous EIM market and then layering on other market productions. However, unlike other RTOs, CAISO was leveraging previous investments in market development to offer EIM services at low-cost and with easy entry and easy exit. These conversations focus on the complexity of the organized market designs and characterize the EIM as an integrated market product that must remain compatible with other real-time and day-ahead market services.

#### Transformation Policy

The EIM is also often described as an initial step toward a more integrated market in the West. For example, in a CAISO Board of Governors meeting, CAISO staff noted: "It's a harbinger of the West working closer together" (Field Observation 9/18/14), and a Committee member indicated some stakeholder discussions are revolving around this issue: "Okay, this is just a small part of the market. Should there be broader engagement in an RTO or an ISO, not just EIM?" (Respondent 214). These descriptions focus on the aspects of EIM market design that create pressure for it to evolve over time to include new participants and new market functions. Such an expansion would improve efficiency, reliability, and importantly, enable the integration of higher levels of renewables. This is clearly articulated by many clean energy advocates. For example, in testifying about what it would take to reach climate change, affordability, and health goals, one advocate declared:

I don't see another way to get there without taking this step. And I mean by that, the entire step. The whole complement of markets that comes with a regional RTO as well as the transmission planning pieces, and thinking through the EIM, which has shown great benefits and potential, I don't think that goes far enough to get to that place.

(Field Observation 6/16/16)

Many clean energy advocates, like the one quoted above, are supportive of regionalization to further clean energy and environmental policy goals, and some utilities and FERC also support regionalization through creation of a multi-state RTO (Respondent 205). These explanations are important because regionalization of the grid provides a way to integrate high levels of wind and solar resources and achieve clean energy policy goals. However, they do not convey the limitations of the EIM's current functionality, but rather focus on the expectation that the EIM will add functionality and characterize the EIM as the first step in transforming the western grid into a fully organized market.

#### Constitution Policy

Other stakeholders most often describe the EIM as requiring independence. For example, a Committee member stated, "It's got to be an independent board solely for the Energy Imbalance Market. It can't be a creature of the California Independent System Operator, or no one would join it" (Respondent 215). These descriptions focus on the aspects of EIM market design that allow participants to have a meaningful decision-making role in the future direction of the market. As described by CAISO staff in a presentation to stakeholders, the guiding objectives for the Committee were intended to drive a "long-term independent EIM" (California Independent System Operator, 2013b).

These conversations are important because the EIM is shifting market

opportunities for utilities outside of California. For example, many California utilities are motivated to participate in the EIM because it reduces the cost of integrating variable renewable resources. In contrast, many utilities outside of California, particularly those that rely heavily on hydroelectric resources, do not face significant challenges in balancing variability within their system. For these utilities, an important motivation to participate in the EIM is the opportunity to provide generation into the market. In addition, expansion to a fully organized market could: reduce opportunities with traditional energy contracting partners; continue to depress prices as more zero marginal cost wind and solar enter the market; allow wind and solar from outside of California and Oregon to be valued as resources that meet state renewable portfolio standard requirements; and increase the value of flexible resources like hydroelectric. For these reasons, utilities are anticipating changing market opportunities and are paying attention to the market evolution. As one Northwest utility explained:

We need to see how to stay relevant and influence where that market goes. We have a lot at stake. We need to be sure the value of hydro continues to be recognized, and transmission value and emission value. We need to continue to influence those big policy issues going forward.

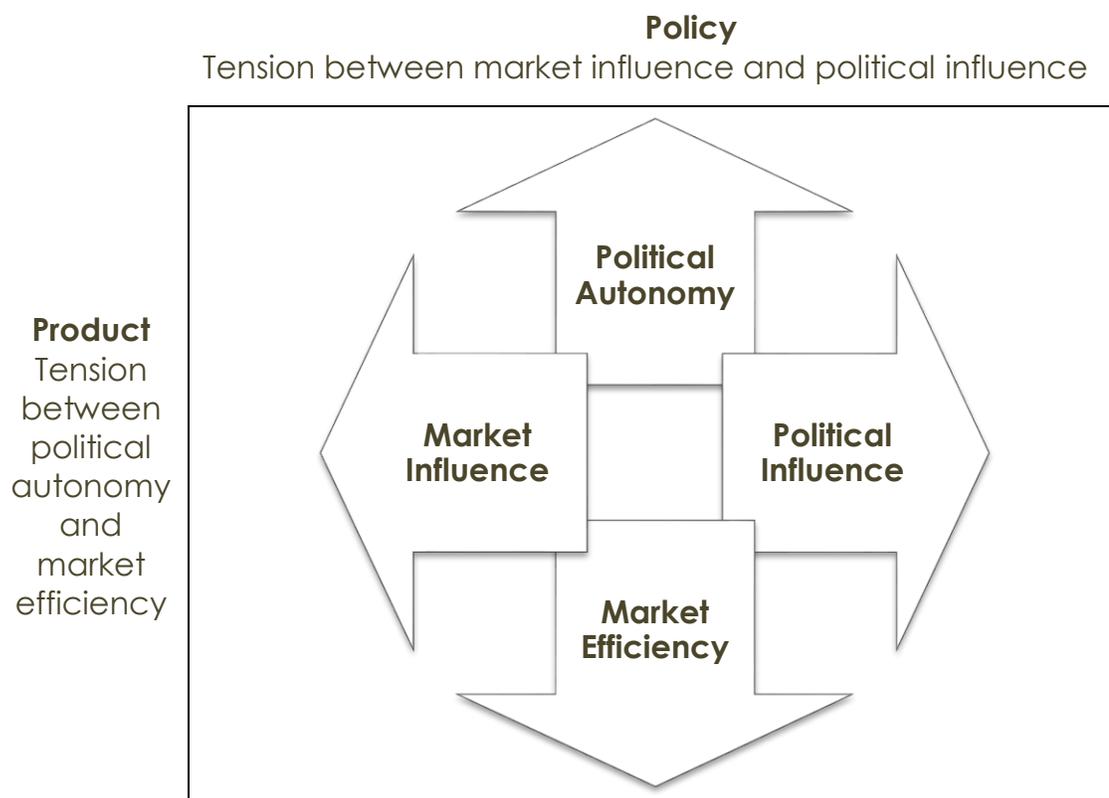
(Field Observation 11/18/15)

As highlighted by this comment, the ability to influence EIM market rules and the future evolution of the market is critical for some stakeholders. However, CAISO's statutory authorization by and accountability to the California Legislature makes the current governance structure untenable. These conversations focus on the potential market opportunities from the EIM and characterize the EIM as the first step in constituting a new autonomous organized market within the western grid.

### Alternative Interpretations

These alternative meanings of the EIM focus on four fundamental local needs and constraints of stakeholders: 1) preservation of political autonomy, 2) requirements for market efficiency, 3) representation of market interests, and 4) representation of political interests. The interpretive flexibility that permits the EIM to be understood as either a product or a policy allowed stakeholders to come together and explore these alternative meanings. However, these meanings also reflect two tensions (Figure 5.2). First, the alternative interpretations reflect tensions around the scope and sale of the EIM, or in other words, how tightly the market and operational design is integrated with existing CAISO markets and whether it will only expand geographically or will also expand to include additional market functions. Second, the alternative interpretations reflect tensions around the structure of EIM decision-making and stakeholder interactions, or in other words, who will influence EIM market design, planning, and operations.

As the Committee began deliberating specific options for EIM governance, the conflicts in these alternative interpretations surfaced and made it difficult for organizations to coordinate work. Although the interpretive flexibility of the EIM opened the possibility for coordination and engaged stakeholders in the initiative, the EIM requires a governance structure to make decisions about new market rules and to encourage additional market participants to join. Defining the scope, scale and structure for EIM governance required additional negotiation of authorities.



**Figure 5.2. Alternative Interpretations of the EIM**  
*The ambiguity of EIM governance and future market design allow it to be interpreted to meet widely varying local needs and constraints.*

### 5.3. Conclusion

The unique design of the EIM allowed it to launch with only a single new market participant – PacifiCorp. However, as other market participants join they are expected to also increase the benefits for existing participants, and in fact, this did occur when NV Energy entered the market because it added transfer capacity (California Independent System Operator, 2016b). The efforts by strategic actors to shift the discourse, use symbolic contrast, and engage in boundary spanning created discursive resources and allowed different local interpretations of the EIM, which enable collaboration and expansion. Between August 2014 and April 2016 five additional investor-owned utilities

decided to join the EIM.<sup>16</sup> These actions were important in overcoming and transforming existing authorities that had prevented collaboration for nearly two decades.

However, the EIM operated without an independent governance structure until June 2016. In the interim, implementation issues were deliberated through CAISO stakeholder processes with advice from the Committee. This approach was untenable over the long term and only accepted because of the work the Committee was undertaking to develop recommendations for an alternative EIM governance structure. Chapter 6 explores how the Committee and stakeholders legitimated existing authority and created new sources of authority in developing recommendations for EIM governance. In doing so, the Committee worked to maintain a common understanding of the EIM while continuing to allow diverse local interpretations.

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<sup>16</sup> Announcement of intent to join: NV Energy (8/14), Puget Sound Energy (3/15), Arizona Public Service (5/15), Portland General Electric (11/15), and Idaho Power (4/16).

## CHAPTER SIX: NEGOTIATING AUTHORITY

Authority provides actors with a rationale for the practices they enact (Fligstein & McAdam, 2012; Moulton & Sandfort, 2017). Yet, in policy implementation, various ambiguous or competing sources of authority must be reconciled and the significance of any particular authority depends on how it is interpreted. Authority is thus *co-created* or *negotiated* among organizations as it is interpreted within a particular context (Fligstein & McAdam, 2012; Koschmann & Burk, 2016; Moulton & Sandfort, 2017). In other words, skilled actors engage in social negotiation to interpret and adapt policy interventions to build shared meanings, enable collective action and enact policy change. Because the EIM is voluntary, the imposition of one governance-model or another could threaten the success of the initiative. Therefore, to further coordination among western stakeholders, it was necessary to collaboratively construct shared meanings that provide rationale for particular governance structures, but also allow stakeholders to tailor interpretations to address local needs and constraints (Bowker & Star, 1999; Fligstein & McAdam, 2012; Moulton & Sandfort, 2017; Susan Leigh Star & Griesemer, 1989).

Chapter 5 identifies four alternative meanings of the EIM that address the local needs and constraints of stakeholders: 1) preservation of political autonomy, 2) requirements for market efficiency, 3) representation of market interests, and 4) representation of political interests. The analysis of stakeholder interactions presented in this chapter investigates how the Committee reconciled the tensions between political

autonomy and market efficiency and negotiated conflicting norms for stakeholder interactions that shape political and market influence. Based on my analysis, the Committee can be said to have performed two transformative functions that contributed to the acceptance of the EIM Governing Body as a legitimate structure. First, the Committee transformed the concept of delegated governance to an opportunity for shaping the future west-wide market evolution and legitimated new rationale that allowed stakeholders to express conditional support for delegated, rather than autonomous governance, as a pragmatic and temporary approach. Second, the Committee created new governance structures for state regulators and regional stakeholders to interact with each other, with the CAISO Board and with the EIM Governing Body. Somewhat counter-intuitively, the Committee sought to achieve greater interaction and relational authority by creating more hierarchical structure in the CAISO process, which has been highly participatory and informal.

The first section of this chapter explains how alternative interpretations of the EIM relate to different, initial preferences for EIM governance. The second section identifies the constraints imposed by the inherent design of the EIM, demonstrates how the Committee engaged in the discursive strategies of tacking and abstraction to create new sources of authority necessary to legitimate EIM governance, and highlights the role of interdependencies with other strategic action fields. The third section of this chapter describes the conflicting organizational norms for interactions among stakeholders and demonstrates how the committee enacted boundary spanning through questioning to produce unique governance structures for coordinating interactions among stakeholders. In these negotiations, interdependencies with other actions fields were also important.

Finally, the last section of this chapter compares the new EIM governance structure to the common elements of regional electricity governance across the seven RTOs in the United States. It also draws implications for the ongoing negotiation of a west-wide organized market and for the evolution of regional electricity system governance.

### **6.1. Governance Models**

Organized markets require governance. A structure is needed to make ongoing decisions about market rules and to align these rules with operations and infrastructure planning. However, market governance is not only an issue of defining mechanisms and procedures, but involves decisions about autonomy and the allocation of influence. The Transitional Committee was created to define the relationship between CAISO and the EIM and to establish structures to allocate influence.

The Committee framed stakeholder discussions around three conceptual models of EIM Governing Body authority: advisory, delegated, and autonomous. In very broad terms, California investor-owned utilities supported an advisory model of governance and Northwest investor-owned and public power utilities supported an autonomous model. However, specific stakeholder positions do not align well with generalizations based on RTO participation, utility ownership, or region; and many stakeholders qualified their positions or recommended alternatives (Appendix F). Furthermore, many stakeholders suggested a need to consider changes to EIM governance or CAISO governance as the market evolves.

Given the long history of failed attempts to extend organized markets in the Western Interconnection, it is not surprising that these positions cannot be easily framed as competing coalitions. The relationships among stakeholders are complex. Within

general categories such as RTO-participation, ownership, or region, utilities differ in their administrative capacity, transmission rights, resource capacity, resource flexibility, bilateral market obligations, electricity costs, renewable energy requirements, and exposure to carbon cost risks. These differences complicate collaboration. For example, a clean energy advocate explained that reaching agreement on another organized market initiative failed because, “all of the participants, the different utilities, are situated differently” (Respondent 217).

Focusing on the alternative interpretations of the EIM provides a way of making sense of these diverse stakeholder positions. The conversations and iterative comments and responses in the EIM stakeholder process reveal how different proposed governance models relate to the local needs and constraints of stakeholders (Table 6.1).

Stakeholders that primarily interpreted the EIM in terms of political autonomy supported an autonomous governance model. These stakeholders commented on the importance of limiting their participation to only imbalance services and the need for EIM governance to be accountable to consumers outside of California. Because the CAISO Board is appointed by the Governor of California and has statutory obligations to the citizens of California, an autonomous governance structure was seen as essential.

Stakeholders that primarily interpreted the EIM in terms of market efficiency supported an advisory model. These stakeholders commented on the value of comprehensive market design, the potential economic and reliability risks associated with disrupting the tightly integrated market framework, the obligation of CAISO to protect all market participants, and the large investment the consumers of California have already made in developing CAISO. Because the EIM is a limited market service, these

stakeholders sought to limit the influence of the EIM Governing Body, but also sought to expand the EIM geographically and functionally.

**Table 6.1. Alternative Interpretations of the EIM Related to Governance Models**

Alternative	Sample Quotes
<p><b>POLITICAL AUTONOMY</b> EIM is a discrete product and governance should be autonomous</p>	<p>“An autonomous governing model would clearly signal to potential market participants that this endeavor is solely focused on the development of an EIM.” (Non-governmental Organization)</p> <p>“The intent of this revision is to ensure that no single group or area can force proposals on others...Overall, it creates an on-going risk that the EIM will not return the maximum achievable benefits to EIM participants that do not choose to participate in the other Cal ISO markets.” (Public Power Organization)</p>
<p><b>MARKET EFFICIENCY</b> EIM is an integrated product and governance cannot be separated</p>	<p>“A separate autonomous governing board would ultimately lead to conflicts resulting in inefficient administration of energy markets which leads to higher costs, reduced benefits, and create seams issues.” (California Investor-Owned Utility)</p> <p>“I emphasize the word <i>seamless</i> because it has two meanings – its normal meaning and the meaning of not creating seams, and the hope that this committee’s work will not introduce additional complexities or seams into the framework of the EIM that we have worked so hard to achieve.” (CAISO Staff)</p>
<p><b>POLITICAL INFLUENCE</b> EIM is a regionalization policy and governance should be transformed</p>	<p>“This evolution of the CAISO into an entity that provides wholesale electric market and operations services on a regional basis, and so is responsible to a range of states, not just California, is already anticipated by California law.” (California Investor-Owned Utility)</p> <p>“One of the most crucial functions for the EIM Governance committee is the authority to recommend and expand the functionality of markets to provide additional services...” (Non-governmental Organization)</p>

Alternative	Sample Quotes
<p><b>MARKET INFLUENCE</b> EIM is a regionalization policy and a foundation for constituting a new governance structure</p>	<p>“...It will require greater coordination and collaboration of a Governing Body independent of CAISO’s Board and its obligations to protect California interest.” (Northwest Investor-Owned Utility)</p> <p>“...The EIM governance committee will be the sole body tasked with ensuring representation and protection of EIM interests in the CAISO markets.” (Northwest Investor-Owned Utility)</p>

Stakeholders that primarily interpreted the EIM in terms of political influence were divided in their governance model preferences. These stakeholders supported regionalization to further clean energy, reliability, and affordability policy goals. They sought a governance approach that would encourage geographic and functional expansion of the EIM. For some of these stakeholders, the delegated or autonomous governance models seemed most likely to encourage regionalization, while others supported transformation of CAISO governance.

Finally, stakeholders that primarily interpreted the EIM in terms of market influence supported autonomous governance. These stakeholders emphasized the need for a neutral market or level playing field. Like the stakeholders that sought political autonomy, these stakeholders objected to California’s role in EIM governance and supported autonomous governance, but rather than seeking a limited market, these stakeholders viewed the EIM as the first step in constituting a new autonomous organized market within the western grid.

What is interesting about this analysis is that initially stakeholders associated their local needs and constraints with particular governance approaches. Stakeholders fundamentally concerned with political autonomy supported an autonomous governance

model, whereas stakeholders primarily focused on the constraints imposed by market efficiency supported an advisory governance model. Other stakeholders who were focused on ensuring political or market influence supported a delegated or autonomous model. With the exception of stakeholders focused on political autonomy, stakeholders were united in support of the long-term transition to regionalization of markets. Part of the challenge for the Committee was to align the different interpretations of the EIM with a common governance structure.

## **6.2. Defining the Relationship between CAISO and the EIM**

In conversations about which governance model to use, the Committee worked to define the relationship between CAISO and the EIM in a way that would encourage EIM expansion, while maintaining the efficiency and reliability of the market. The third theme that emerged from my data involves this tension between political autonomy and market efficiency and how it shaped the legitimacy of a delegated governance model. I suggest that Committee conversations about the value proposition of the EIM, the feasibility of amending the California statutory authorization of CAISO, and connection between the EIM and the future evolution of a west-wide organized market transformed the concept of delegated governance and legitimated a shared governance model as a pragmatic and temporary approach.

This section identifies the formal economic and political authority of the EIM value proposition that was initially offered as a rationale for a delegated approach to governance. The section also examines how the social practices of tacking and abstraction shaped how the Committee and stakeholders understood the alternative models for EIM governance. Finally, this section explains how field interdependencies

altered the potential for the EIM to further regionalization and brought attention to taken-for-granted assumptions.

#### Authority of the EIM Value Proposition

The EIM value proposition provided a rationale for supporting a delegated, rather than autonomous, governance model. The EIM leverages the complex market platforms paid for by California ratepayers. By extending existing systems and market processes to a wider footprint, CAISO is able to offer an EIM that is low-cost, has easy entry and exist, and can be extended incrementally to voluntary participants. These features are important for potential market participants focused on political autonomy. However, this value proposition imposes two constraints on EIM governance. First, the EIM must remain tightly integrated with other CAISO markets. Second, supervision of the EIM tariff cannot be transferred to an autonomous Governing Body without change to California statute.

#### Negotiating Authority for Shared Governance

The authority of the EIM value proposition conflicted with other sources of authority that are important to stakeholders outside of CAISO, including the potential economic and environmental benefits from EIM expansion and state and local obligations to serve their constituents. Consequently, stakeholders did not agree on the significance of the EIM value proposition as they began to deliberate a governance recommendation. However, the Committee used two discursive practices that shaped how stakeholders interpreted it: tacking and abstraction. I suggest that these practices revealed important aspects of local interpretations and shaped the rationale for participating in a delegated form of governance.

### Tacking

The concept of a boundary object incorporates the interpretive flexibility of a loosely structured common concept, more specific interpretations that make the concept useful for work that is not coordinated, and a process of tacking between these forms of the object to coordinate work without consensus (Star, 2010; Star & Griesemer, 1989). The EIM stakeholder engagement process provides a unique opportunity to analyze how actors “tack” between common and local interpretations as they construct and use a boundary object to facilitate coordinated work. The Committee is comprised of stakeholders. The members were nominated by stakeholder sectors and appointed by the CAISO Board of Governors. The members deliberated in working groups and public meetings, worked together to draft iterative governance proposals that were shared widely with any interested stakeholder, and presented the proposals in meetings. These members were selected not to represent their individual organizational interests, but rather were to selected to represent “...a diverse, well-qualified group that can promote the objectives of a successful EIM” (California Independent System Operator, 2013c). However, the home organizations and in some cases the actual committee members, also participated in the process as stakeholders by submitting written comments or identifying positions representing their individual interests. For example, the organizations that employed nine of the thirteen Committee members submitted written comments on the governance proposals.

In the first six months, the public meetings of the Committee primarily consisted of updates from CAISO staff on the operation of the EIM. Committee members interacted very little with the public or with each other in these public venues. During this

time period, the Committee was gathering information and engaging in private working group sessions. After this period of learning about legal and economic constraints, structures of other RTOs, and local concerns, the Committee referenced this experience to provide legitimacy to their proposed course of action. For example:

This is not something that occurred overnight. There was a lot of debate...while many of us came from different lines of organizations the criteria is that we be independent on the transitional committee and that is what we are looking for going forward.

(Field Observation, 1/12/15)

In the next eight months of Committee meetings, the members explained common positions in public and to their home organizations and responded formally with comments on the proposals. So while members had legitimacy within the Committee because of their particular stakeholder experiences, they also had legitimacy with their home organizations because of their ability to interpret positions of the Committee. This tacking between meanings and how it shaped the interpretation of the EIM value proposition can be seen in the following example, which traces the dialogue as represented in iterative written documents between the Committee and local comments of one Committee member between January and July of 2015:

COMMON: The model involving 'Autonomous Separate Entity' raises questions related to the additional costs. Those additional costs could undermine a key premise for the EIM business model ... Would these types of costs, or other potential costs, be worth incurring in order to have the EIM governed through an autonomous entity?

LOCAL: If there was significant critical mass of potential EIM Entities ... then it may be that those benefits would justify additional system, legal, administrative, and other supporting start-up costs. This would be a factual inquiry.

COMMON: At this time, we have mixed opinions about change to the overall ISO governance. On one hand, if the ISO continues to expand in its geographic reach, such a change seems both fair and inevitable. At this time, however, a change may be premature...

LOCAL: It is appropriate...that the CAISO Board would maintain the foundation of market governance until such time as regional developments are sufficiently extensive that wholesale governance changes may be considered further...

COMMON: One continuing point of disagreement is whether the Transitional Committee should attempt to create an autonomous and separate model of governance for EIM matters now. This is a concept we rejected...A number of commenters reiterated their desire for an autonomous model...We once again decline to adopt an autonomous governance model, because the only way to do so meaningfully is to obtain a legislative approval that is unlikely with respect to the immediate need for EIM governance.

LOCAL: As currently constructed, the EIM is a bolt-on addition to the CAISO Real-Time Market. It is not an RTO, yet...the Committee faces a Hobson's choice, and the failure to move forward with some proposal seems untenable.

This exchange is interesting for several reasons. First, it highlights that stakeholders confronting a need for political influence did not consider potential costs sufficient justification to rule out an autonomous governance model. The comments of many stakeholders reflected similar positions and asserted the need for the EIM to have some degree of independent authority. Second, it demonstrates a shift in the formal dialogue, which had previously omitted reform of CAISO governance from the range of possible options. Many stakeholders did not accept the constraints imposed by existing California statute, but instead repeatedly asked the Committee to recommend that statutory changes be pursued. Finally, it illustrates how the Committee offered the limited EIM functionality as a rationale for accepting more limited influence required by not pursuing legislative action and how a local response reflected acceptance of this

rationale. In this way, the Committee and stakeholders tailored the local meaning of the EIM. By repeatedly referring to the EIM as a “bolt-on addition,” stakeholders reinforced the limited scope of EIM functions relative to the full range of organized market services offered by CAISO within California and the dependence of the EIM on this integrated market platform.

### Abstraction

Throughout the Committee process, stakeholders expressed diverse positions about the evolution of the EIM market. While nearly all stakeholders expressed support for expansion of the EIM, they had different understandings of what expansion meant. Specifically, some stakeholders supported the EIM expanding geographically and evolving to autonomous governance, but with functionality limited to current services. In contrast, other stakeholders supported the EIM expanding both geographically and functionally and evolving into a multi-state RTO. Rather than explicitly accepting or rejecting differing expectations or explicitly designing governance to support a particular pathway for market growth, the Committee repeatedly framed the governance recommendation as being developed with “an eye toward the future” and “not an end state.” By refraining from committing to one particular future and abstracting the concept of market evolution, the Committee retained an element of interpretive flexibility in the EIM.

### Interdependencies Affecting Choice of Governance Models

The interdependence between the Committee processes and other action fields imposed constraints on what was possible and shaped how stakeholders understood the choice of governance models. In April 2015, PacifiCorp signed an agreement with

CAISO to explore the feasibility of full participation in the CAISO organized markets. This occurred after the Committee's ninth meeting and in the midst of stakeholder comments on the straw proposal. This changed the context of the Committee's work. PacifiCorp and CAISO began to evaluate benefits of a fully organized market and discussions were initiated with California policymakers to consider the statutory reforms necessary to transform CAISO into a multi-state RTO. Consequently, the EIM could no longer be expected to evolve into a regional market with expanded functionality and deliberations about statutory changes shifted to a different venue.

This external event required the Committee and stakeholders to discuss the future of the EIM in more specific terms and disrupted the previous efforts to abstract the concept of market evolution. The PacifiCorp announcement created a *moment of co-authoring* in which the Committee and stakeholders discussed their previously taken-for-granted assumptions about the future of the EIM. The limited functionality of the future EIM and uncertainty about its long-term viability if market participants engage in a multi-state RTO initially led some stakeholders and Committee members to question the need for EIM governance. However, several Committee members suggested that their work designing the EIM Governing Body should be viewed as foundational for regional governance. A new rationale for delegated governance emerged. The success of EIM governance was framed as critical for building the trust necessary for a wider regional market (CAISO, 6/22/15). To further this end, the Committee innovated the concept of shared governance, which places an emphasis on authority derived through ongoing social negotiation.

The shared governance mechanism was designed to “foster a collaborative relationship” between the EIM Governing Body and the CAISO Board of Governors. It gives the EIM Governing Body primary authority over EIM market rules, although any approved changes are also subject to consent by the CAISO Board. It also requires joint approval of market rule changes that affect both the EIM and other CAISO markets. Additionally, the EIM Governing Body has a formal advisory role for market rules applicable generally to CAISO markets. This shared approach avoids competing FERC tariff filings and requires collaboration. By creating space for interactions rather than creating hierarchical structures, the Committee sought to provide tangible relational authority, while ensuring the EIM and other organized market rules remain coherent and compatible.

#### Balancing Political Autonomy and Market Efficiency

The EIM value proposition provided a rationale for supporting a delegated governance model and ensuring that the EIM remains tightly integrated with other CAISO markets. However, this source of authority was not sufficient. For stakeholders concerned about political autonomy, the distinction between the EIM and the full CAISO market became important in accepting a delegated form of governance. Furthermore, the initiative to consider comprehensive regional governance provided a rationale for the Committee’s decision declining to recommend changes to California statute. By repeatedly referring to the EIM as a “bolt-on addition,” stakeholders reinforced the limited scope of EIM functions relative to the full range of the CAISO organized market, the limited future evolution of the market, and the dependence of the EIM on the CAISO market platform. Finally, the innovation of a shared governance model transformed the

concept of delegated governance from the designation of limited authority to an opportunity to shape the future west-wide market evolution and provided a rationale for engaging in the EIM.

These new sources of authority did little to change stated stakeholder positions regarding the end state for EIM governance. In particular, many stakeholders continued to voice a preference for autonomous governance and requested that the Committee recommend changes to California state law. However, these new sources of authority allowed stakeholders to express conditional support for delegated, rather than autonomous governance, as a pragmatic and temporary approach. For example, stakeholders endorsed delegated governance because of the “practicalities of the immediate need” or for a “limited duration.” Stakeholders faced a “Hobson’s choice” in that a proposal was needed to address immediate EIM governance needs, but the broader discussions of CAISO governance reform or autonomous west-wide governance had shifted to a different venue.

The shared understanding of EIM governance as something temporary and open to further modifications, but linked to the success of market reform in the wider region provides a loosely structured shared meaning that allows stakeholders with different beliefs about market evolution to participate together in the EIM.

### **6.3. Developing Structures to Coordinate Stakeholder Interactions**

In conversations about governance structures to coordinate stakeholder interactions, the Committee worked to reconcile conflicting organizational norms for how to interact with market participants and public sector stakeholders. The fourth theme that emerged from my data involves this tension between the influence of political interests

and the influence of market interests. I suggest that the Committee sought to achieve greater interaction and relational authority through decisions to create two new governance structures: a body of state regulators and a forum for regional stakeholders.

This section identifies the conflicting organizational norms that contribute to a rationale for the two new structures to coordinate stakeholder interactions. It also identifies how the Committee enacted boundary spanning through the discursive practice of questioning to reveal the importance of and differences between organizational norms. Finally, this section explains how field interdependencies altered the likely scope of EIM participation and brought attention to taken-for-granted assumptions.

#### Authority of Organizational Norms

Over the course of Committee deliberations, the structures and norms for how multi-state RTOs interact with state policymakers provided a rationale for creating a new EIM body of state regulators. In other parts of the United States, multi-state RTOs have voluntarily established organizations of state regulators and policymakers that coordinate information sharing and provide recommendations to the RTO and to FERC (for explanation of purpose, see Smith, 2007). These organizations are actively involved in issues that overlap with traditional areas of state purview, such as regional transmission planning, transmission cost allocation, resource adequacy, and clean energy policies.

Although the EIM is a limited market product, establishing a mechanism to represent diverse public interests was important for stakeholders focused on political influence. State regulators and local officials are accountable to the public. If they delegate influence to a new EIM Governing Body, they need a rationale that allows them to align this decision with their obligation for accountability. When a regional market

forms, the shift in the locus of control from state and local to federal regulation and the new lines of accountability are difficult for public sector organizations to maneuver. For example, one stakeholder speculated that the primary role of the governance effort was to provide an accountability mechanism for state regulators:

Because they [state regulators] wanted to show their constituents and their governor's offices that we're keeping a tab. We are not controlling. We're keeping a tab on this growing market structure... (Respondent 219)

The Committee initially proposed a body of state regulators to advise both the CAISO board and the EIM Governing Body. The proposed body, like the state organizations affiliated with multi-state RTOs, was designed to provide accountability to the public, facilitate the work of state regulators, and inform RTOs on issues at the interface with state priorities. However, the relatively large share of public power in the Western Interconnection and the relationships formed through long-term participation in voluntary power pools complicated this proposal.<sup>17</sup>

#### Negotiating Authority for Stakeholder Structures

While the proposal to create an elevated role for state regulators was widely supported, stakeholders did not agree that this body alone would be sufficient to represent the full range of public interests in the Western Interconnection or on how other political and market interests should be represented. Through an iterative process of questioning focused on differentiating positions, Committee members engaged stakeholders in conversations that explored their preferences for stakeholder interactions. These responses informed the Committee as it worked to construct governance structures with

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<sup>17</sup> Power pools establish relationships among electric power companies within a region with common operational goals, such as maintaining system stability and service reliability. The Western Interconnection includes the Northwest Power Pool and the Western Systems Power Pool.

sufficient perceived legitimacy to attract new EIM market participants. I suggest that through this practice of questioning and refining the recommendations, the Committee enacted boundary spanning that shaped how stakeholder interactions with the EIM will be coordinated. This can be seen in the following examples.

#### Interactions with Market Participants

The following exchange illustrates how Committee questioning revealed the importance of differences between CAISO norms for interacting with market participants and the norms in traditional power pools and other RTOs.

COMMITTEE MEMBER: The EIM governance is not yet set and while concerns about governance are often raised, it is not clear what type of governance is acceptable?

STAKEHOLDER: Something like the governance of the Southwest Power Pool [a multi-state RTO] would be acceptable. They have lots of member representation; stakeholders are heard and have real influence. We are looking at getting away from a “California-centric” approach. We are looking to be independent from looking at exclusively California.

(Field Observation 03/05/15)

This exchange highlights that for many stakeholders influence is equated with the concepts of membership and representation. For example, utilities that are part of the Northwest Power Pool have expressed support for the Southwest Power Pool governance approach. The Southwest Power Pool, like other RTOs that evolved from existing power pools, is structured around the concepts of membership, hierarchical committees, sector representation, voting, and industry staff preparing position papers. It describes itself as “member-driven.” During Board meetings, members of committees representing market participants and state regulators sit intermixed with the Board and provide advisory opinions before the Board votes. As a Committee member explained, these organizational

norms are important for building relationships and creating legitimacy in formal governance structures:

I think it facilitates that culture of engagement and inclusiveness. And it's a lot easier to sit back in a stakeholder process, write comments, and then file a pleading at FERC objecting to something than it is to sit in a group of your peers and not compromise on a position.

(Field Observation 5/6/16)

These structures for how other RTOs have chosen to interact with market participants stand in stark contrast with the CAISO stakeholder engagement process. The CAISO process is structured around the concepts of open participation, open access to the Board, and ad hoc initiatives driven by a professional staff. CAISO does not have a concept of membership, a hierarchical committee structure, or voting, and sector representation is only used for Board nominations.

These differences in how RTOs engage with market participants did not initially surface as an issue for the Committee. Although the Committee was diverse in terms of industry sector, expertise, ownership, and participation in organized markets, the members were predominantly from organizations that were familiar with CAISO processes. Of the original ten members, five were affiliated with organizations that engaged regularly with CAISO; three were state regulators; one was affiliated with an EIM participant; and one was affiliated with an investor-owned utility operating in both the Western and Eastern Interconnection. The Committee viewed the CAISO stakeholder engagement process in positive terms and proposed that the EIM use the same structures for interacting with stakeholders. However, for many stakeholders not familiar with CAISO processes the EIM proposal lacked sufficient hierarchical structures to be perceived as legitimate.

### Interactions with Public Sector Agencies

Committee questioning also revealed the importance of differences between the organizational norms of RTOs and the norms of public power utilities in the Western Interconnection. In response to questions about whether representatives of public power should be included on the body of state regulators, a wide range of stakeholders, including an investor-owned utility, municipal utilities, and clean energy advocates, replied that an advisory body, like the body of state regulators, should include the local officials that regulate public power. Others noted that the proposed body of state regulators unfairly elevated the interests of investor-owned utilities relative to public power and that an advisory body should be “created in a balanced way to represent other interests including those of non-jurisdictional utilities” (Stakeholder Comments and EIM Transitional Committee Responses, 03/23/15). These comments are interesting because they illustrate the inherent challenge of creating governance structures to coordinate interactions among state regulators, state policymakers, and investor-owned utilities and public power utilities, which at the local level comprise the roles of regulator, policymaker, and market participant.

CAISO and other RTOs treat public power utilities as market participants, rather than public sector representatives. These norms conflict with how many public power utilities in the Western Interconnection view their responsibilities. Several stakeholder comments highlight that, similar to state regulators, public power utilities face pressures to ensure engagement in the EIM continues to support their clean energy, reliability, and affordability goals. As one stakeholder explained:

For local government structures, that's very challenging, not only to cede to some other authority in the first place, but then to accept the risk, the future risk, associated with those changes. (Respondent 221)

In other words, public power utilities have unique public accountability responsibilities that differ from investor-owned utilities and affect their assessment of market risks. From this perspective, the body of state regulators unfairly excluded elected or appointed officials responsible for municipal or cooperative power. These comments also highlight that some public power utilities see state regulators as not only representatives of the public interest, but also as representatives of the investor-owned utilities that they regulate. From this perspective the body of state regulators upsets the level playing field of the market.

To address stakeholder concerns, the Committee proposed that the body of state regulators include representatives from public power. This was framed as a way to address the public accountability obligations of these utilities and provide representation for their consumers. The proposal was supported by public power utilities, but opposed by Bonneville Power Administration. As a federally authorized Power Marketing Administration, Bonneville is often included with public power; however, it does not have a clearly corresponding elected official that would have met the criteria being discussed for participation on the body of state regulators. Other stakeholders asserted that public power should be viewed, not as a representative of public interest, but primarily as a market participant. From this perspective, including public power on the body of state regulators would unfairly elevate the interests of a certain class of market participants and would upset the level playing field of the market.

### Interdependencies Affecting Governance Structures

Interdependencies with other action fields altered stakeholder thinking about what was possible and shaped how stakeholders understood alternative EIM governance structures. While the Committee was developing its initial issue paper, the Northwest Power Pool issued a solicitation to develop a separate EIM. The solicitation was closed without a disposition in February 2015. Although some members of the Northwest Power Pool continued to explore a more limited and less expensive alternative, it became less likely that there would be a second EIM in the Western Interconnection and more clear that Bonneville Power Administration would be unlikely to join the CAISO EIM.

These external events highlighted taken-for-granted assumptions that governing structures, like the Body of State Regulators, would be designed around the geographic scale of the EIM and brought attention to the concerns of stakeholders that do not intend to participate in an organized market, but are critical for coordinating such services and ensuring efficient use of transmission infrastructure. Committee interactions with stakeholders around these issues, led to a fundamental shift in thinking about stakeholder engagement. Rather than designing structures for stakeholder interactions around market participants, the Committee began thinking about how to coordinate work with non-participants and the seams with these “neighboring balancing authorities.”

The increasing importance of clean energy in the West contributed to this shift in thinking about stakeholder engagement. Stakeholders that interpret the EIM as a regionalization policy to promote integration of wind and solar recognized the importance of engaging across the boundaries between RTO and non-RTO regions. For

example, a Committee member challenged others to think differently about the role of EIM governance:

I think one of the biggest benefits that we eventually get from doing this is the overall coordination of the system. We have PMAs [Power Marketing Administrations] that control large parts of the western grid...I think it is wise to have some sort of role for them to be heard...Probably, they wouldn't be interested in joining the market necessarily, but they facilitate participation in the market and their systems are implicated. No more than they can pretend that we're not here. We can't pretend that their not there either.

(Field Observation 4/30/15)

This comment reflects a growing interest in innovating a uniquely Western approach to electricity system governance that would coordinate bilateral markets, organized markets, infrastructure planning, and operations at a regional scale.

The Committee was challenged with reconciling several conflicting positions: objections to creating a body of state regulators while relying on CAISO stakeholder processes; objections to including public power on the body of state regulators; and support for coordinating among organized markets, bilateral markets, and transmission systems. In response, the Committee chose to limit participation in the body of state regulators, but departed from the CAISO norms for stakeholder engagement. The Committee proposed a Regional Issues Forum to engage neighboring balancing authorities, including Power Marketing Administrations (PMAs), and to provide a forum for “face-to-face communication” among stakeholders.

The new forum is intended to augment CAISO's existing stakeholder process, which continues to be open to all interested stakeholders including representatives of neighboring balancing authorities and PMAs. The Committee recognized that they needed to interact in new ways in order for EIM governance to be perceived as legitimate

and to attract new market participants. By instituting new structures to increase interactions among participating and non-participating stakeholders, the Committee acknowledged the importance of communication, relationships and trust as emergent sources of authority. One Committee member provided the following rationale for the Regional Issues Forum:

I think as we have talked through some of the EIM start up issues and also in this governance-centric process, I think we've determined that the more discussion we have of these matters the better we facilitate understanding and the better off we are and so that is really the underlying purpose...

(Field Observation 8/25/15)

As reflected in this comment, the success of the Committee process itself was seen as a rationale for creating new structures to encourage stakeholder interactions and facilitate coordination among stakeholders with different regulatory requirements and business model demands.

#### Balancing Political Influence and Market Influence

EIM stakeholders had to negotiate conflicting norms for stakeholder interactions. Other RTOs coordinate interactions with public sector stakeholders through organizations of state regulators. This type of organization was important to state regulators, state policymakers, and other stakeholders who sought a mechanism to ensure energy policy values were represented in EIM governance. However, public power utilities did not see this structure as representative of their interests or the interests of their consumers, but rather viewed it as upsetting the level playing field of the market. Furthermore, these stakeholders did not accept CAISO's open stakeholder process as a legitimate participation mechanism, but instead equated influence with membership and representation. To reconcile these conflicting norms, the Committee created new

governance structures for state regulators and regional stakeholder to interact with each other, with the CAISO Board and with the EIM Governing Body. Somewhat counter intuitively, the Committee sought to achieve greater interaction and relational authority by creating more hierarchical structure in the CAISO process, which has been highly participatory and informal.

#### **6.4. Elements of Regional Electricity Governance**

The alternative interpretations of the EIM focus on four fundamental local needs and constraints of stakeholders: 1) requirements for market efficiency, 2) preservation of political autonomy, 3) representation of political interests, and 4) representation of market interests. I suggest that these needs and constraints are not only relevant for the EIM, but are generalizable to RTO governance structures in the United States.

Across the United States, transmission organizations have formed seven different RTOs. Despite being authorized under the same federal authority and early FERC efforts to impose a standardized market design, each RTO is shaped by its context and is somewhat unique (Appendix G). Of the seven RTOs, four serve market participants across a multi-state region: Midcontinent Independent System Operator (MISO), ISO New England (ISO-NE), PJM Interconnection (PJM), and the Southwest Power Pool (SPP). In contrast, three RTOs serve market participants within the boundaries of a single state: CAISO, Electric Reliability Council of Texas (ERCOT), and New York Independent System Operator (NYISO). The scope of RTO operations ranges from PJM, with more than 171,000 MW of generation capacity and a service population of approximately 61 million customers, to ISO-NE, with 31,000 MW of generation capacity and a service population of approximately 31 million (Independent System Operator of

New England, n.d.; PJM Interconnection, 2016b).

The system architecture, market designs, and utility business models also differ across RTOs. For example, NYISO has 11,000 miles of transmission lines, eight transmission owners, and more than 400 market participants (Federal Energy Regulatory Commission, n.d.-b; Fernandez, 2011). In contrast, SPP has 60,000 miles of transmission lines, 43 transmission owners, and 93 market participants (Federal Energy Regulatory Commission, n.d.-b; Southwest Power Pool, n.d.). In MISO, the utilities are largely vertically integrated and regulated by the states, whereas many of the states in PJM have more fully restructured generation and retail sales. Finally, RTOs differ in renewable resource generation and capacity (Borenstein & Bushnell, 2015).<sup>18</sup> For example, CAISO, ERCOT, ISO-NE and NYISO have the largest share of hydroelectric and renewable resources (Federal Energy Regulatory Commission, 2016).

These differences create distinct organizational challenges for RTO governance and decision-making. However, all RTOs have four common governance elements that correspond to the unique combinations of local needs and constraints of stakeholders within a particular region (Table 6.2).

First, RTO boards are designed to ensure market efficiency and promote a level playing field. FERC Order 2000 requires RTOs to be independent of control by any market participant or class of participants (Federal Energy Regulatory Commission, 2000) and RTO board members are nominated by stakeholders, but selected based on

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<sup>18</sup> Data is not available from FERC (2016) for the Electric Reliability Council of Texas (ERCOT). ERCOT 2015 generation use: 48% natural gas, 28% coal, 12% wind, 11% nuclear, and 1% other. ERCOT 2015 generation capacity: 53% natural gas, 22% coal, 18% wind, 6% nuclear, and 1% other (Electric Reliability Council of Texas, n.d.)

expertise and diversity.

**Table 6.2. Comparison of RTO Governance Structures**

	CAISO	ERCOT	ISO-NE	MISO	NYSIO	PJM	SPP
States Served	1	1	6	15	1	13	14
<b>Board Membership and Nomination</b>							
Independent	✓	Hybrid <sup>1</sup>	☐	☐	☐	☐	☐
Board Selection	Governor appoints <sup>2</sup>	Board and Sectors	Board and Sectors	Board and Sectors	Board and Sectors	Board and Sectors	Board and Sectors
<b>Stakeholder Engagement<sup>3</sup></b>							
Members and Sector Voting	*	☐	☐	☐	☐	☐	☐
Public Power Sector	☐	☐	☐	☐	☐		☐
Alternative Resources Sector <sup>4</sup>	*		☐				
Civil Society Sector <sup>5</sup>	*			☐	☐		
<b>State Relationship</b>							
	Governor appoints board	State PUC oversight	State policy / regulator body	State regulator body <sup>6</sup>	State PUC oversight	State regulator body	State regulator body
<b>Shared Section 205 Filing Rights</b>							
			Competing	Delegated	Consensus	Consensus	Delegated
<ol style="list-style-type: none"> <li>Board includes 5 independent members, 10 stakeholder representatives and Chair of the Texas Public Utilities Commission.</li> <li>Appointed by Governor and confirmed by State Senate using stakeholder nomination process at Governor's discretion.</li> <li>Typical sectors include transmission, generators, other suppliers, and end-users. Table highlights sectors of interest.</li> <li>Includes renewable energy, energy efficiency, demand response, and distributed generation.</li> <li>Includes environmental and consumer advocates. MISO also explicitly includes state regulators as a separate sector.</li> <li>The Organization of MISO States consists of state regulators and associate members representing other public policymakers.</li> </ol> <p>* = CAISO uses sectors only for board nominations, which are considered only at the discretion of the Governor.</p>							

	CAISO	ERCOT	ISO-NE	MISO	NYSIO	PJM	SPP
Sources: (California Independent System Operator, 2014a, 2014b; E4 the Future and Synapse Energy Economics, 2016; Fernandez, 2011; PJM Interconnection, 2016a; Shonkwiler, 2016)							

Second, RTO mechanisms for sharing authority to file changes to market rules act to preserve political autonomy. The Federal Power Act authorizes RTOs to submit market rule changes for regulatory approval by FERC, and in general RTOs have a mechanism to share this formal authority.<sup>19</sup> CAISO is an exception in that it does not share Section 205 filing rights. In ISO-NE, NYISO and PJM, specific member committees have either competing or consensus authority to make or request Section 205 tariff filings with FERC. For example, in PJM, the Members Committee has filing authority over operating issues and the Board has filing authority over reliability and rates. Similarly, the state regulator organizations affiliated with MISO and SPP have delegated authority to request Section 205 tariff filings for specific policy issues. For example, the Organization of MISO states has responsibility for transmission planning, resource adequacy, and transmission cost allocation and has formally delegated authority to request that MISO make a tariff filing with FERC for certain transmission projects.

Third, RTO structures for interacting with state regulators or policymakers provide a formal mechanism for the influence of political interests. Experience across RTOs demonstrates a nexus of formal regulatory authority among federal, state and local entities around issues such as resource adequacy, capacity, transmission planning, storage, and demand response. The multi-state RTOs interact with state officials through organizations that coordinate information and recommendations among states. In contrast, single-state RTOs are responsible to state officials through either direct statutory

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<sup>19</sup> ERCOT is not FERC jurisdictional. Thus, this mechanism is not applicable.

authorization or regulatory oversight.

Finally, RTO stakeholder engagement processes provide a formal mechanism for the influence of market interests. FERC Order 719 requires RTOs to be responsive to stakeholders and to provide stakeholders with direct access to their boards (Federal Energy Regulatory Commission, 2008). In response to this requirement, RTOs generally have membership requirements, hierarchical committee structures, and industry or public interest sector voting. Each RTO varies in the types of sectors represented and in the weighting of sector votes. Again, CAISO is an exception to this approach to stakeholder interactions.

CAISO is unique among RTOs because it does not ensure stakeholders a role in selecting the board, it does not have a mechanism for sharing Section 205 filing rights, it is authorized in California statute, and it has an open stakeholder engagement process with a flattened organizational structure. The voting thresholds in typical RTO processes promote coalition building and make it easier to sustain the status quo rather than enact change; whereas, the CAISO process does not require consensus to enact change. In addition, in typical RTO processes, the sector definitions and weighted voting structures affect the balance of power; whereas, in the CAISO process the balance of power is shaped by how staff responds to stakeholder input. As stakeholders in the Western Interconnection contemplate creating a west-wide RTO, they are negotiating yet another unique combination of governance elements to reflect local needs and constraints.

## **6.5. Conclusion**

Like many policy implementation issues, EIM governance is not only an issue of defining policy mechanisms and procedures, but involves decisions about autonomy and

the allocation of influence. This research demonstrates that EIM governance was designed to maintain a loosely structured construct with interpretive flexibility and rationale that would encourage additional EIM participation without requiring consensus. This indeed appears to have been successful. Since the EIM Governing Body was appointed and despite continued support for autonomous governance, three public power organizations – the Balancing Authority of Northern California, Sacramento Municipal Utility District, and Seattle City Light – have announced their intent to join the EIM. Additionally, the Baja California Norte grid in Mexico is also exploring participation.

This research also highlights that the success of the new EIM Governing Body depends on its ability to co-create emergent forms of authority, rather than on hierarchies and rules. This also appears to be proving successful. Participants in both the Body of State Regulators and the Regional Issues Forum have commented on the value of relational authority. For example, in the Body of State Regulators: “Communication and education and as much talking as possible is helping us all get to the same place” (Field Observation, 05/06/15) and in the Regional Issues Forum: “There is a fundamental trust around that group that is more than the sum of its parts” (Field Observation, 06/20/16).

Finally, this research identifies a growing interest in innovating a uniquely Western approach to electricity system governance. Stakeholders across the Western Interconnection are discussing a “federated” approach to electricity system governance and the possibility of creating a “Regional System Operator” rather than an RTO. The EIM governance recommendation to create a Regional Issues Forum challenged stakeholders to consider this type of innovation and created opportunities for public power, civil society organizations, and adjacent balancing authorities to participate; but

requires that these entities engage in the deeply technical work of market design, operations, and planning.

## CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

This chapter provides a brief summary of the purpose of my research, the central research question, how the data were collected, and the approach to data analysis. The remaining sections of this chapter discuss my major findings, the practical and theoretical contributions of my research, limitations of the study, and directions for future research.

The West has a unique approach to electricity system design and governance. As I discuss in Chapter 2, in the late 1990s, when FERC required open access to the transmission grid, RTOs formed across most of the U.S.; yet, the West continued to rely on more decentralized institutions and decision-making processes to manage transmission planning and operations. Furthermore, outside of California, the West did not have access to the real-time, automated scheduling and dispatch of organized wholesale electricity markets.

In the 20 years since the first organized markets were formed, policies promoting clean, low-carbon energy and technological innovation have spurred rapid growth in renewable resources and critical advances in communication, information, and control system technologies. These new resources and technologies are driving electricity systems in many regions to become even more integrated and interdependent. In the West, this evolution of policy and technology was instrumental in the decision of regulators, utilities and stakeholders to create an EIM to optimize real-time balancing services among voluntary market participants.

Given that the EIM emerged after many states enacted clean energy policies, and after the growth of wind and solar transformed the resource mix and operating constraints of the electricity system, I initially became interested in how these differences in context affected EIM implementation. Specifically, the purpose of my research was to explore the issue of authority in energy policy implementation and the role of non-market participants, like state policymakers and civil society organizations, in implementation involving voluntary multi-organizational networks, like RTOs. To accomplish this, I combined policy implementation, field theory, interorganizational communication, and boundary work concepts in Chapter 3 and developed an empirical investigation of how stakeholders reconciled multiple and often conflicting authority to enact policy change and achieve collective purposes. The intent was to provide a better understanding of how policy implementation occurs in practice and of the role of social interactions and interdependencies in shaping implementation processes. Therefore, this study asks how stakeholders, using social practices and strategies, created and legitimated sources of authority to establish a governance structure for this new market service.

As outlined in Chapter 4, this research question was investigated through a 32-month study of interactions among stakeholders in the West as they explored the implications of an organized market and developed an EIM governance structure. The research included 21 interviews with individuals across diverse industry and civil society sectors, 27 field observations of public meetings, and extensive document review. The data reflect perspectives of incumbent CAISO participants, key non-RTO actors, state regulators, and regional clean energy advocates. The data were analyzed using two complementary methods: the interviews, stakeholder comments, and fieldnotes were

coded through a cyclical process; and other documents were analyzed through progressive focusing to generate issues and themes.

### **7.1. Summary of Findings**

This case study demonstrates how organizations were able to achieve a level of perceived legitimacy in the new EIM governance structure, despite long-standing mistrust among participants, a resistance to ceding authority to FERC, and conflicting perspectives on how to structure the relationship between the EIM and CAISO and relationships among stakeholders. Overall, this analysis demonstrates that policy implementation is worked out in practice through a process of reconciling multiple sources of authority and that in this process authority itself is an emergent and negotiated phenomenon. The multi-organizational policy implementation effort led by the EIM Transitional Committee resulted in governance structures intended to promote interaction and relational authority and with sufficient perceived legitimacy to attract new participants.

The data support four primary findings: 1) dominant yet deficient narratives provided a rationale for ongoing resistance to regional governance in the West and prevented collaboration; 2) actors overcame and transformed deficient sources of authority by enacting social strategies that allowed alternative interpretations of the EIM construct and enabled organizations to begin collaboration; 3) actors using social negotiation interpreted and adjusted the EIM policy intervention and co-created emergent forms of authority that are flexible and dynamic; and 4) field interdependencies surfaced taken-for-granted assumptions and provided critical resources for innovative forms of collective action. These findings provide important insights for understanding how public

sector and civil society organizations that are engaged in complex governance systems seek to exercise discretion and sustain accountability to the public interest.

### Common Resistance to Shared Authority

As I discussed in Chapter 5, in the U.S. and around the world, electricity systems are becoming more integrated and interdependent with regional governance and organized markets providing economic efficiencies and operational flexibility. Yet, some regions, including the Western U.S., have remained relatively decentralized. Forming an organized electricity market involves coordination or collaboration among organizations. This type of policy implementation often involves ambiguous authority relationships or competing sources of authority (Koschmann, 2012; Moulton & Sandfort, 2017; Ostrom, 2011), and policy change requires efforts to overcome or transform existing authorities that would otherwise prevent collaboration (Koschmann & Burk, 2016). Thus, understanding what has prevented regional collaboration and the expansion of an organized electricity market in the West is central to understanding how policy change occurred.

A key finding that emerged from my data is that a dominant narrative of jurisdictional independence and mistrust of multi-state RTOs and FERC provided a rationale for inaction and prevented collaboration. Stakeholders both within and outside of California believe that retaining jurisdictional independence, rather than engaging in the collective activities of a multi-state RTO, serves their political and economic interests. This can be seen in the resistance among states to engaging with each other; in the divisions across federal, state, and local levels of regulatory authority; and in concerns about the inherent risks of engaging in a more dynamic governance system.

These tensions and repeated interactions among stakeholders have reinforced a narrative around a preference for “homegrown solutions” and “local control,” and the need to “protect state interests.”

This dynamic of mistrust and resistance to the shared authority required by a multi-state RTO emerges from the diverse energy system values and complex jurisdictional relationships in the West. The region’s energy system values are reflected in wide differences among states in formal clean energy policies, affordability of electricity, and their resources mix. Furthermore, CAISO is authorized by state statute and FERC, dominated by three large investor-owned utilities and a partially restructured industry. In contrast, the non-RTO region of the West is shaped by public power and a vertically integrated industry. These differences mean that any expansion of organized markets to access the anticipated economic, reliability, and environmental benefits of such a change involve complex negotiations. Stakeholders must negotiate different perspectives regarding potential political and economic benefits and risks of collaboration, as well as the complications introduced by California statute and FERC jurisdiction in relation to public power. This finding from my analysis demonstrates that rational positions can generate narratives that provide justification for inaction that can persist even as economic and political tradeoffs evolve. These then become deficient narratives that must be overcome or transformed to provide justification that will enable policy change.

#### Transforming Existing Authority

CAISO, state regulators, utilities, and other stakeholders needed to transform long-standing resistance to the shared authority of a multi-state RTO in order to open the

possibility for stakeholders to engage in a regional initiative. The concept of a Western EIM was developed through diverse venues over the course of nearly a decade and was designed to overcome some of this resistance, yet stakeholders continued to be deeply divided over how the EIM would be implemented in practice. The initial steps to implement the EIM involved stakeholders in the social negotiation of authority and a process of interpreting what is and what is not possible. Scholars have developed the concept of *boundary objects* to help understand the social practices involved in managing the tensions between different interpretations for how policy implementation should proceed and coordinating work without reaching consensus (Bowker & Star, 1999; Nelson-Marsh, 2017; Susan Leigh Star & Griesemer, 1989). Central to these social practices is the ability to create a shared understanding of a loosely structured common concept and to maintain elements of alternative interpretations that make the concept useful for work that is not coordinated (Bowker & Star, 1999; Susan Leigh Star & Griesemer, 1989).

Another key finding that emerged from my analysis in Chapter 5 involves the loosely structured meaning of an EIM and the alternative interpretations that allowed stakeholders to begin engaging in the initiative. My analysis in Chapter 5 demonstrates that CAISO, state regulators, utilities, and other stakeholders did this using three discursive strategies. First, the bilateral EIM agreement between CAISO and PacifiCorp shifted the discourse by identifying major market participants, designating CAISO as the market operator, and proposing a relatively equal sharing of benefits. This strategic move framed the EIM as a dynamic, multi-state market that generates economic and environmental benefits and worked to shift the discourse regarding the potential

economic risks of regional engagement. Second, certain regulators and policymakers began to contrast the existing decentralized grid with regional information, communication, and control system technologies that could better serve the public interest. In repeated conversations about the efficiencies of grid modernization and efforts to lead the transition to renewable energy, actors used these symbolic contrasts to transform the dominant authoritative narrative about the potential political risks of regional engagement. Third, stakeholders engaged in boundary spanning to develop and sustain alternative interpretations around a loosely structured concept of the EIM. These alternative meanings of the EIM focus on four fundamental local needs and constraints of stakeholders: preservation of political autonomy; requirements for market efficiency; representation of market interests; and representation of political interests.

The interpretive flexibility of the EIM allowed stakeholders to come together and explore these alternative meanings, which enabled collaboration and expansion. Between August 2014 and April 2016, five additional investor-owned utilities decided to join the EIM. These actions were important in overcoming and transforming existing authorities that had prevented collaboration for nearly two decades. This finding from my analysis demonstrates that multi-organizational policy implementation is a social process that involves transforming deficient narratives that have prevented or could undermine collaboration.

#### Negotiating Authority and Altering Interventions

Because the EIM is voluntary, the imposition of one governance model or another could threaten the success of the initiative. Therefore, to further coordination among stakeholders, it was necessary to collaboratively construct shared meanings that provide

rationales for particular governance structures, adjust the policy intervention to reconcile competing sources of authority, and allow stakeholders to tailor interpretations to address local needs and constraints (Bowker & Star, 1999; Fligstein & McAdam, 2012; Moulton & Sandfort, 2017; Susan Leigh Star & Griesemer, 1989). In this way authority is *co-created* or *negotiated* among organizations as it is interpreted within a particular context (Fligstein & McAdam, 2012; Koschmann & Burk, 2016; Moulton & Sandfort, 2017).

The third finding from my analysis is that actors interpreted and adjusted the policy intervention to co-create emergent forms of authority that are flexible and dynamic. The analysis in Chapter 6 of the EIM initiative demonstrates two distinct approaches for how actors interpreted and adjusted the policy intervention. In negotiating the tension between political autonomy and market efficiency, actors did not substantively alter the policy intervention, but instead interpreted existing authority and co-created new authority to legitimate the structure of the proposed intervention. Critical to acceptance of this structure was stakeholder engagement in a process that co-created authority to enable collaboration, without reaching consensus. Specifically, the shared understanding of EIM governance as something temporary and open to further modifications, but linked to the success of market reform in the wider region, allows stakeholders with different beliefs about market evolution to tailor local interpretations and participate together in the EIM. These new sources of authority provided a rationale for stakeholders to express conditional support for delegated, rather than autonomous governance, as a pragmatic and temporary approach based primarily on relational authority. In contrast, actors negotiating the tension between political and market influence modified the proposed policy intervention to reconcile conflicting

organizational norms and promote greater interaction and relational authority. The Committee recognized that CAISO needed to interact in new ways in order for EIM governance to be perceived as legitimate and to attract new market participants. By instituting new structures to increase interactions among participating and non-participating stakeholders, the Committee acknowledged the importance of communication, relationships, and trust as emergent sources of authority. Specifically, the Committee created new governance structures for state regulators and regional stakeholders to interact with each other, with the CAISO Board and with the EIM Governing Body. Somewhat counter intuitively, the Committee sought to achieve greater interaction and relational authority by creating more hierarchical structure than in the CAISO process, which has been highly participatory and relatively flat in structure.

This research highlights that EIM governance was designed to provide interpretive flexibility and a rationale that would encourage participation among stakeholders with diverse perspectives and that success will depend on the Governing Body's ability to co-create emergent forms of authority, rather than on hierarchies and rules. Since appointment of the EIM Governing Body, three public power utilities have announced their intent to join the EIM and participants in both the Body of State Regulators and the Regional Issues Forum have commented on the value of relational communication. This finding from my analysis demonstrates that multi-organizational policy implementation is a social process that requires interpretation of authority and adjustment of policy interventions to enable collective action. This finding also highlights that in complex systems, like organized electricity markets, it is difficult to define hierarchies and rules to coordinate actions. In these systems, collaboration is facilitated

by flexible and dynamic sources of authority that allow temporary and pragmatic solutions and enable interactions and relational authority.

### Field Interdependencies

Policy implementation processes occur across multiple fields and the horizontal and vertical ties among these fields affect the purposes of the field, the actors who are involved, what is possible, and introduce new discursive resources and sources of authority (Fligstein & McAdam, 2012; Moulton & Sandfort, 2017).

The fourth finding from my analysis is that routine field interdependencies provided critical resources for innovative forms of collective action or, in other words, policy change. The analysis in Chapter 6 identifies the critical importance of actions in adjacent fields for surfacing taken-for-granted assumptions. This allowed new sources of authority to be perceived as legitimate, and contributed to interpretations and adjustments to policy interventions that enabled collective action. Specifically, the PacifiCorp decision to explore the feasibility of full participation in the CAISO organized markets meant that the EIM could no longer be expected to evolve into a regional market with expanded functionality. This external event required the Committee and stakeholders to discuss the future of the EIM in more specific terms and a new rationale for delegated governance emerged. The success of EIM governance was framed as critical for building the trust necessary for a wider regional market. In another example, the failure of the Northwest Power Pool effort to create a second EIM meant that it became clearer that Bonneville Power Administration would be unlikely to join an EIM. These external events brought attention to the concerns of stakeholders who do not intend to participate in an organized market, but are critical for coordinating such services and ensuring the

efficient use of transmission infrastructure. Consequently, these events led to a fundamental shift in thinking about stakeholder engagement. Rather than designing governance around market participants, the Committee began thinking about how to coordinate work with non-participants and the seams with these “neighboring balancing authorities.”

This finding from my analysis demonstrates that field interdependencies can affect the social processes of negotiating authority by surfacing taken-for-granted assumptions, which provided discursive resources and new potential sources of authority for innovative forms of collective action.

## **7.2. Theoretical and Practical Implications**

The understanding of authority as a negotiated phenomenon is well established in field theory and organizational communication literature (Fligstein & McAdam, 2012; Taylor & Van Every, 2014) and is being explored in policy implementation literature (Moulton & Sandfort, 2017). My contribution is to extend these ideas to the context of multi-organizational regulatory policy implementation and to provide empirical evidence of the process. Accordingly, my research makes several theoretical and practical contributions: 1) multi-organizational policy implementation is a social process of transforming, negotiating, and co-creating authority and relational authority can be an important rationale for enacted practices; 2) strategic actors engage in communicative and social processes in which authority is emergent, and abstraction enables collective action without requiring consensus; 3) routine field interdependencies can bring attention to taken-for-granted assumptions and create a *moment of co-authoring*; and 4) regional

electricity system governance structures evolve as they balance the inherent tensions of organized market participation.

### Policy Implementation Involves Transforming, Negotiating, and Co-Creating Authority

My research provides empirical support for the idea that policy implementation involves social negotiation of multiple, often conflicting or ambiguous, sources of authority. Moulton and Sandfort (2017) introduce this idea in their strategic action field framework for policy implementation, but the implications of this theoretical approach are not well established in the policy process literature. The research in this dissertation supports the usefulness of this theoretical approach in understanding drivers of policy change and the aspects of a policy intervention that are ultimately enacted, particularly within the context of policy implementation that spans the responsibilities of more than one organization. It also applies the theory to new policy domains and provides empirical evidence from application to regulatory policy implementation and to the complex socio-technical system that shapes energy policy implementation.

This research also extends the Moulton and Sandfort (2017) theory of the social negotiation of authority by introducing two established ideas from organizational communication literature. First, this research provides empirical evidence that multiple conflicting authorities and the complexity of work can prevent imposition of authority through hierarchies and rules. Furthermore, it provides evidence that to enable collective action in such cases, actors can establish structures designed to increase interactions and relational authority. Here, my research provides empirical evidence of established ideas within the organizational communication literature that conceptualize the negotiation of authority as an ongoing process of producing emergent forms of influence and

accountability that can “transcend boundaries and hierarchies” and extends these ideas to the context of policy implementation (Benoit-Barné & Cooren, 2009; Koschmann & Burk, 2016; Taylor & Van Every, 2014). Second, this research provides empirical evidence that in complex policy implementation systems, actors using discursive strategies overcome and transform established yet deficient authority that would otherwise prevent collective action. Here, my research provides additional support to preliminary research in the organizational communication literature on *de-authoring* to overcome or transform existing authority (Koschmann & Burk, 2016).

#### Strategic Actors Engage in Social Negotiation to Enable Policy Change

An important implication of this research is that social negotiation of legitimacy is a fundamental driver of policy change. My research provides evidence of authority as an emergent phenomenon and of the use of abstraction to enable collective action. This extends and complicates the policy process theory concept of a policy entrepreneur or policy broker by drawing attention to the importance of communication in practice and of considering both instrumental and existential motivations for individual actions. Accordingly, this research provides empirical support for the strategic action field framework proposed by Moulton and Sandfort (2017) and contributes to policy process theory by extending the theoretical understanding of individual strategic action beyond a focus on instrumental motives or the traits of a particular individual.

Using rational choice or bounded rationality models of the individual, several policy process frameworks and theories draw attention to the role of individuals in driving policy change and these actors are sometimes referred to as policy entrepreneurs or policy brokers (Baumgartner & Jones, 2009; Kingdon, 2011; Lindblom, 1968; Olsen

& March, 1989; Sabatier & Jenkins-Smith, 1993). However, this is an area of research that is considered under-theorized (Mintrom & Norman, 2009; Pierce et al., 2014; Sætren, 2016; Weible, Sabatier, & McQueen, 2009). My research demonstrates that policy implementation involving voluntary collective action is shaped by the strategic actions of individuals interpreting sources of authority and adjusting policy interventions to provide rationales and perceived legitimacy for the practices they enact. It identifies several specific strategies used in the social process of negotiation, including shifting the discourse, symbolic contrast, boundary spanning, and tacking. However, the primary theoretical contribution is to make a distinction between instrumental and existential motivations and to suggest that for strategic actors seeking to enable change by forming shared meanings and collective identities, abstraction is an important strategy that can enable collective action without requiring consensus among participants.

Fligstein and McAdam (2012) theorize a model of the individual that recognizes both instrumental and existential motives. Instrumental motives reflect individual and collective self-interest, whereas existential motives reflect the human need to fashion shared meanings and identities. Adopting this model of the individual and applying the Moulton and Sandfort (2017) framework, which draws attention to understanding how authority gains perceived legitimacy, this research clarifies how such negotiations can proceed in cases without consensus among actors. In social processes of negotiation that require voluntary coordination, the interpretive flexibility of the policy intervention allows stakeholders to develop alternative interpretations to serve their local needs and abstraction of the rationale for collective action contributes to the perceived legitimacy of the enacted policy intervention. Thus, the social skills of entrepreneurs are not particular

strategies that are applied by particular individuals at particular moments, but emerge through the interactions among actors and structures within the process of social negotiation of authority.

The practical implication of this finding is that actors seeking to implement a particular policy intervention within a complex implementation system are necessarily going to be required to engage in a process of negotiation. As actors negotiate competing and ambiguous sources of authority, modifications or adaptations of the policy intervention, interpretation of authorities within context, and the emergence of new rationale can enable collective action and innovative policy change. Furthermore, social strategies that accept interpretive flexibility, alternative interpretations, and abstraction can facilitate the coordination of work without driving decision making to consensus. Rather than associating these changes and strategies with flaws in policy design or departures from democratic accountability, these characteristics are inherent to multi-organizational policy implementation and the flexibility of structures and the emergence of new rationales. The use of dynamic and emergent sources of authority can be critical to innovative policy change in complex systems.

#### Interdependencies Critically Affect Social Negotiation

Another important implication of this research is that field interdependencies that bring attention to taken-for-granted assumptions and create moments of co-authoring are important drivers of policy change. This expands on the understanding of “external shocks” and subsystem interdependencies in the policy process literature by providing insight into the intervening steps between the external event and policy implementation decisions. Thus, this research provides empirical support for the Fligstein and McAdam

(2012) theory that suggests the ties among fields impose constraints and opportunities that are routinely affected by actions in other fields. It also extends this idea to the context of policy implementation to suggest that policy stability *and* change are the result of dynamic interactions across interdependent action fields.

Several policy process theories focus on a single policy system or subsystem as the level of analysis, while also highlighting the role of external effects on change or stability (Baumgartner & Jones, 2009; Kingdon, 2011; Sabatier & Jenkins-Smith, 1993; Schneider & Ingram, 2005). However, researchers have called for additional investigation into the interdependence among multiple policy systems or levels in a system and the intervening steps between an external event and major policy change (Hupe, 2014; Weible et al., 2009). Policy process literature has long recognized the role external events or “external shocks” in fostering policy change by shifting material resources, altering the power of coalitions, and changing beliefs. This research brings new insight to the role of field interdependencies by focusing on how these ties routinely introduce discursive resources and different sources of authority that affect social negotiations among actors (Fligstein & McAdam, 2012; Hardy et al., 2005; Moulton & Sandfort, 2017). Specifically, this dissertation demonstrates how interdependencies result in new opportunities or constraints that shape the policy implementation process and demonstrates how interdependencies can reveal taken-for-granted assumptions to enable innovative policy change.

My research provides empirical evidence that *routine* actions in other fields impose constraints and opportunities and suggests two ways in which this can occur. First, the emergence of a new interdependent action field around creation of a west-wide

organized market imposed constraints on what was possible and shifted material and symbolic resources in ways that critically shaped the structure of the policy intervention. Second, the elimination of a competing action field that had engaged actors in ongoing negotiations to create an alternative EIM made new resources available and removed informal sources of authority that had been introduced into and could have continued to be leveraged in negotiations.

My research also provides empirical evidence that field interdependencies required actors to explore taken-for-granted assumptions and enabled innovative policy change. Other research theorizes that critical exchanges between actors in which they socially negotiate conflicting or ambiguous authorities can be characterized as *moments of discursive attention*, which distinguish exchanges involving the negotiation of areas where actors disagree from exchanges involving the negotiation of areas where actors have taken-for-granted agreement (Nelson-Marsh, 2006). This research expands on this literature by suggesting that in relatively formal venues or when many social negotiations occur in non-public settings, field interdependencies may trigger moments of discursive attention and draw the researcher's attention to exchanges that involve co-authoring and are critical to understanding policy implementation responses.

My research demonstrates that field interdependencies not only imposed opportunities and constraints, but also created moments of co-authoring that led to innovative policy change. Specifically, my research provides empirical evidence that actions in other fields not only imposed constraints and opportunities, but also influenced the social negotiation among actors by revealing previously taken-for-granted assumptions and justifications. Adopting the focus of Fligstein and McAdam (2012) on

change requiring innovative action, my research identifies that following critical field interdependencies and negotiation of taken-for-granted justifications for certain practices, actors innovated new governance structure that had not previously been considered or implemented elsewhere. Thus, rather than competing to impose one alternative or another, actors engaging in a social process of negotiation co-created new sources of authority and novel structures.

#### Regional Governance Structures Balance Tensions of Organized Market Participation

Finally, another implication of this research is that RTO governance structures evolve as they balance the inherent tensions of organized market participation. RTO political control and accountability to the public interest are served through common governance structures adapted to the unique combinations of local needs and constraints of stakeholders within a particular region. This contributes insights into how RTO governance structures are evolving and informs the ongoing debate about RTO accountability, aligning federal power markets with state policy initiatives, and institutional change to support the current energy transition.

RTOs differ in how they work with utilities, state regulators, and other stakeholders to adapt market rules in response to state policies and there are important observed variations in how RTO processes prioritize implementation approaches. These RTO governance structures and stakeholder processes are increasingly important, yet understudied, policy environments. This research fills an important gap in energy policy literature by identifying the formal and informal authorities that shaped the governance structures of a newly forming regional electricity governance organization. My research identifies common governance structures and variations across RTOs that serve to

balance the inherent tensions of regional organized markets within our system of energy federalism: 1) requirements for market efficiency, 2) preservation of political autonomy, 3) representation of political interests, and 4) representation of market interests.

This research provides empirical evidence that extends earlier work identifying the challenge RTOs face in balancing accountability to a wide range of stakeholders who are “not equally important,” critical dimensions in responding to pressures for institutional change within the electricity system, and the complexity of public interest accountability within the evolving federal and state regulatory relationships (Dworkin & Goldwasser, 2007, p. 579; Dworkin et al., 2013; Eisen, 2016; Goldthau, 2014; Rossi, 2016).

This work also provides practical insights for ongoing deliberations involving FERC, RTOs, state regulators, utilities and other stakeholders. The future of Western electricity system governance continues to evolve. The initiative to create a west-wide RTO based on the CAISO-PacifiCorp partnership is currently stalled; however, the EIM is expanding and stakeholders are gaining experience with the new EIM governance structures. Whatever emerges will be shaped by efforts to balance the inherent tensions of organized market participation and by the actors that have been and will continue to be engaged in this process.

The West has demonstrated a unique approach to energy system governance and the EIM has been a critical part of the evolution of this complex system. For now, the EIM is an innovative alternative to a fully organized market. As such, the EIM is fundamentally reshaping interactions among CAISO, EIM participants, and neighboring balancing authorities, Western electricity system governance, other aspects of CAISO

market design, and the value of new technologies and existing assets. If the EIM evolves into a separate RTO offering a full range of market services or, alternatively, if CAISO expands to be a west-wide RTO, making the EIM obsolete, the EIM still will have served a critical role in facilitating this transition. The EIM is providing experience with innovative structures, new sources of authority, and building relationships that will shape the governance of any future Western RTO.

### **7.3. Limitations and Future Research**

Despite these contributions to understanding policy implementation and energy policy, the research is limited by its focus on a single case study and a single policy implementation problem. Furthermore, the research is somewhat limited by the perspectives included. The interview participants were people actively involved in CAISO, the EIM initiative, or the Northwest Power Pool EIM initiative. Therefore, the perspectives of stakeholders in the Rocky Mountain west and southwest were only included through formal written comments. Additionally, many informal and working group interactions were not public. While this is typical of public sector interorganizational collaborations and stakeholder engagement processes, the impact of these conversations on the overall implementation process can only be discerned indirectly through subsequent public interactions, comments, and personal reflections in interviews.

There is much more to be learned about how RTOs engage with stakeholders and how these processes shape energy policy implementation. Having established initial concepts about how RTOs act at the border between federal and state authorities and are responsive to the needs of voluntary market participants, further research should explore

the idea of negotiated authority across additional RTOs and explore different policy problems. It would be particularly important to examine how RTOs are responding to other state policy initiatives—for example, mandates or incentives to reduce greenhouse gas emissions or to encourage distributed energy resources. Additionally, further research is needed to examine how RTOs relate to one another along jurisdictional boundaries or “seams.” Finally, valuable insights could be gained from research assessing the policy outcomes of the EIM Governing Body, the role of the Body of State Regulators, and the Regional Issues Forum, as well as continued exploration of how the initiative to create a Western Regional System Operator unfolds.

Additionally, there is much more to be learned about policy implementation that spans the responsibilities of more than one organization. This dissertation highlights the value of applying the strategic action field framework and boundary work concepts to the context of policy implementation, but many questions remain. Additional research could be undertaken using this framework to make sense of observed variations in implementation approaches across electricity governance organizations, including across RTOs and across newly emerging organizations to facilitate distributed energy resources. More research could be undertaken applying these ideas to additional regulatory policy setting and comparing these to the service delivery settings that were used to develop the Moulton and Sandfort (2017) framework. Finally, research could be undertaken to further evaluate how actors adjust their approach to social negotiation as they move across interdependent action fields.

#### **7.4. Conclusion**

The findings and implications of this research are relevant for policy and management and are of interest to practitioners and researchers engaged in facilitating implementation of energy policy. The conclusions are three-fold. First, engagement in RTO processes is critical for ensuring effective policy implementation to achieve policy goals for institutional innovations, the adoption of emerging technologies, and the pace of electricity system change. Second, understanding RTO structures and social processes critically underpins state and federal clean energy policy implementation and allows evaluation and assessment of policy effectiveness. Third, cultural authority and social processes are fundamental to RTO policy implementation and should be considered in designing energy policies. Electricity market governance organizations, like RTOs, are central to energy policy implementation and are fundamentally shaping the future electricity system.

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APPENDIX A

**Western Interconnection Balancing Authorities**

AESO - Alberta Electric System Operator  
AVA - Avista Corporation  
AZPS - Arizona Public Service Company  
BANC - Balancing Authority of Northern California  
BCHA - British Columbia Hydro Authority  
BPAT - Bonneville Power Administration - Transmission  
CFE - Comision Federal de Electricidad  
CHPD - PUD No. 1 of Chelan County  
CISO - California Independent System Operator  
DEAA - Arlington Valley, LLC  
DOPD - PUD No. 1 of Douglas County  
EPE - El Paso Electric Company  
GCPD - PUD No. 2 of Grant County  
GRID - Gridforce  
GRIF - Griffith Energy, LLC  
GRMA - Sun Devil Power Holdings, LLC  
GWA - NaturEner Power Watch, LLC  
HGMA - New Harquahala Generating Company, LLC  
IID - Imperial Irrigation District  
IPCO - Idaho Power Company  
LDWP - Los Angeles Department of Water and Power  
NEVP - Nevada Power Company  
NWMT - NorthWestern Energy  
PACE - PacifiCorp East  
PACW - PacifiCorp West  
PGE - Portland General Electric Company  
PNM - Public Service Company of New Mexico  
PSCO - Public Service Company of Colorado  
PSEI - Puget Sound Energy  
SCL - Seattle City Light  
SRP - Salt River Project  
TEPC - Tucson Electric Power Company  
TIDC - Turlock Irrigation District  
TPWR - City of Tacoma, Department of Public Utilities  
WACM - Western Area Power Administration, Colorado-Missouri Region  
WALC - Western Area Power Administration, Lower Colorado Region  
WAUW - Western Area Power Administration, Upper Great Plains West  
WWA - NaturEner Wind Watch, LLC

APPENDIX B

**Interview Protocol**

### Introductory Questions

*Establish you've done your homework, but that you're a novice and you're open to being taught. It's crucial to establish that the goal is to learn the ins and outs without judgment.*

*Provide the consent form, allow them to read and sign. After consent given, START THE RECORDER and begin.*

**Opening Script:** The primary goal of our research project is to understand how the decision making process works at RTOs. We've been trying to understand the formal process; we need to understand better the experiences of those who participate in the actual process. Our questions are really a conversational guide to help us understand your experience at/with \_\_\_\_ [RTO].

### Demographics/History

1. How have you been involved with \_\_\_\_\_ [RTO]?
  - a. Probe: How long have you been involved with \_\_\_\_\_ [RTO]?

### Understanding the Process for Decision Making

2. How would you characterize the stakeholder process at \_\_\_\_\_ [RTO]?
  - a. Probe: What is a typical meeting like?
  - b. Probe: Are there any other elements in the process that I wouldn't understand from information on the website?
  - c. Probe:
    - i. It sounds like you've had a *positive experience*; can you tell me more about what works well in the process? Is there anything that you would change?
    - ii. It sounds like you've had a *negative experience*; what were some of the challenges or what would you change in the process?
3. How would I know when a decision has been made?
  - a. Probe: Who is involved in deciding what items are put on the agenda or how quickly issues move through the process?
  - b. Probe: Could you provide an example?
4. Do stakeholders or staff work on issues outside of the formal meetings?  
*[UNDERSTAND EXPERIENCE / SENSE OF RTOs]*
  - a. Probe: How does that work?
  - b. Probe: Is it important to have certain stakeholders or staff involved in an issue?

### Understanding the Stakeholder Groups

5. Who are the stakeholder groups involved [in the issues you are working on]?
  - a. Probe: Who are the stakeholders frequently involved in stakeholder processes?
6. How would you characterize the stakeholders?
  - a. How would you describe the influence of certain stakeholder groups?
  - b. How would I recognize different stakeholder groups in a meeting?
7. What is it like for newcomers to participate in the stakeholder process?
  - a. Probe: What have \_\_\_\_\_ [names of new stakeholder groups] had to do to be part of the process?
  - b. Probe: How would you know if a newcomer is doing something wrong or how would you help a newcomer figure out the process?

### Understanding Influences

8. Are issues regarding transmission, markets and reliability related?
  - a. Are these coordinated in the decision making process?
  - b. What are some common disagreements you see in the process?
9. How do people enter into leadership positions?
  - a. I'm trying to understand leadership. Do stakeholder groups identify formal or informal leaders?
  - b. Can you describe the board/advisory committee nomination process?

### Conclusion

10. That's all for my questions. What else should I know or be asking in order to understand the \_\_\_\_\_ [RTO]'s processes, stakeholder groups and participation?
11. Is there anything you would like to ask me?
12. Would you mind recommending anyone else who you think I should speak with that would be interested in participating?

Thank you for your time. We really appreciate it!

APPENDIX C

**Summary of Field Observations**

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
<b>CAISO Stakeholder Engagement Meetings and Stakeholder Workshops</b>							
Transmission Planning Meeting	1	10	54 on WebEx at opening	27-Feb-14	Folsom, CA	WebEx	180
Transmission Planning Standards Meeting	1	16	NA	4-Apr-14	Folsom, CA	WebEx	240
Energy Storage Interconnection Opening Initiative	1	9	NA	7-Apr-14	Folsom, CA	WebEx	60

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
Energy Storage Roadmap Workshop	1	23	200 - 300 in-person and 201 WebEx	4-Sep-14	Folsom, CA	WebEx	360
Second Storage Roadmap Workshop	1	18	66 on WebEx after opening	13-Oct-14	CPUC, San Francisco, CA	WebEx	270
<b>Board of Governors and Market Surveillance Committee Meetings</b>							
Regular CAISO Board of Governors Meeting	1	13	NA	6-Feb-14	Folsom, CA	Recorded Audio	180

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
Market Surveillance Committee Meeting	1	23	NA	19-May-14	Folsom, CA	WebEx	330
Regular CAISO Board of Governors Meeting	1	11	About 35 in-person at opening	18-Sep-14	Folsom, CA	In-Person	240
<b>EIM Governance and Transitional Committee Stakeholder Engagement Meetings</b>							
Governance Recommendation	1	6	12 in-person and 41 WebEx	12-Jan-15	Phoenix, AZ	Recorded Audio	69

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
Issue Paper Presentation							
Governance Recommendation Straw Proposal Presentation	X	X	14 in-person and 56 WebEx	31-Mar-15	Folsom, CA	X	X
<b>EIM Transitional Committee Meetings</b>							
EIM Transitional Committee Meeting	1	7	TBD	1-Jul-14	Folsom, CA	WebEx	78
EIM Transitional Committee Meeting	X	X	X	26-Aug-14	Las Vegas, NV	WebEx	X

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
EIM Transitional Committee Meeting	Executive Session	NA	NA	10-Sep-14	Teleconference	NA	NA
EIM Transitional Committee Meeting	1	14	TBD	23-Oct-14	Sacramento, CA	WebEx	122
EIM Transitional Committee Meeting	1	14	TBD	20-Nov-14	San Francisco, CA	WebEx	114
EIM Transitional Committee Meeting	1	5	TBD	19-Dec-14	Teleconference	WebEx	53
EIM Transitional Committee Meeting	1	5	TBD	12-Jan-15	Phoenix, AZ	WebEx	63

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
EIM Transitional Committee Meeting	Executive Session	NA	NA	17-Feb-15	Teleconference	NA	NA
EIM Transitional Committee Meeting	1	7	About 20 including staff	5-Mar-15	Portland, OR	In-Person	150
EIM Transitional Committee Meeting	Executive Session	NA	NA	13-Apr-15	Teleconference	NA	NA
EIM Transitional Committee Meeting	1	16	TBD	30-Apr-15	Folsom, CA	WebEx	148
EIM Transitional Committee Meeting	1	12	TBD	25-Jun-15	Reno, NV	WebEx	133

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
EIM Transitional Committee Meeting	Executive Session	NA	NA	20-Jul-15	Teleconference	NA	NA
EIM Transitional Committee Meeting	1	9	TBD	25-Aug-15	Folsom, CA	WebEx	103
EIM Transitional Committee Meeting	X	NA	NA	21-Oct-15	Sacramento, CA	WebEx	NA
EIM Transitional Committee Meeting	X	NA	NA	19-Nov-15	Teleconference	WebEx	NA
<b>Regional Governance Meetings and</b>							

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
<b>Regional Webinars</b>							
Market Governance Webinar PUC-EIM Group	1	4	131-153 on Phone	1-Oct-14	Recorded Audio	WebEx	NA
Senate Bill 350 Studies Public Meeting	1	15	97 at opening	8-Feb-16	Folsom, CA	WebEx	300
PacifiCorp Presentation at NWPC Meeting	1	5	NA	8-Feb-16	Portland, OR	WebEx	60

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
CAISO and PacifiCorp Joint Conference on Governance Development	1	9	NA	10-Feb-16	Web Conference	WebEx	88
Regional Grid Operator and Governance	1	TRANSCRIPT	NA	6-May-16	Sacramento, CA	WebEx	269
Regional Grid Operator and Governance	1	TRANSCRIPT	NA	16-Jun-16	Sacramento, CA	WebEx	209
Regional Grid Operator and Governance	1	TRANSCRIPT	NA	20-Jun-16	Denver, CO	WebEx	173

<b>Observation Type</b>	<b>Number of Observations</b>	<b>Pages of Fieldnotes</b>	<b>Participation</b>	<b>Date</b>	<b>Location</b>	<b>In-Person or WebEx</b>	<b>Minutes</b>
Regional Grid Operator and Governance	1	TRANSCRIPT	NA	26-Jul-16	Sacramento, CA	WebEx	315
Regional Issues Forum	1	10	NA	4-Aug-16	Boise, ID	In-Person	120
TOTAL FIELD NOTES SINGLE-SPACED PAGES		261					
TOTAL TRANSCRIPT DOUBLE-SPACED PAGES		718					
TOTAL OBSERVATIONS AND MINUTES	27						4427

APPENDIX D

**Summary of Energy Imbalance Market Documents**

<b>Document Type</b>	<b>Number of Documents</b>	<b>Pages</b>	<b>Source</b>
Governance Foundational Information	14	511	Proposals and White Papers = 7 Transitional Committee Draft and Final Charter = 3 Governance Sector Roster = 1 MOU = 1 Benefits Studies = 2
Transitional Committee Development	30	581	Proposals, White Papers, and Presentations = 18 Draft Transitional Committee Charters = 2 Board of Governors Decision Documents = 5 FERC Opinion = 1 Agendas and Sector Templates = 4
Transitional Committee Meetings and Stakeholder Engagement	77	641	Proposals, White Papers, and Presentations = 33 Market Surveillance Committee Opinions = 4 Working Group Updates, Benefits, and Motions = 6 Draft Charters, Bylaws, Selection Policies = 4 Agendas and Minutes = 30
Stakeholder Comments	28	459	Number of Comments = 136 Number of Stakeholders = 55

APPENDIX E

**Codebook**

<b>THEME</b>	<b>CATEGORY</b>	<b>SUB-CATEGORY</b>
Resistance to Collective Action	Energy Values	Clean Energy Goals
		Affordability/ Reliability
		Environmental Goals - Hydro
	Jurisdictional Divides	California Dominating
		FERC Dominating
		Shift in Regulatory Federalism
Transforming Authority / Boundary Object	Shift in Discourse	Teamwork
		Benefits
	Symbolic Contrast	Grid Modernization
		Clean Energy Transition
	Boundary Spanning	Discrete Product
		Integrated Product
		Transformation Policy
		Constitution Policy
Political Autonomy vs. Market Efficiency	Authorities	Value Proposition

<b>THEME</b>	<b>CATEGORY</b>	<b>SUB-CATEGORY</b>
		California Statute
		Limited EIM Functionality
	Social Skills	Tacking
		Ambiguity
	Interdependence	No Expansion of Functionality
Political Influence vs. Market Influence	Authorities	Norms for Market Participant Interactions
		Norms for Public Sector Interactions
	Social Skills	Boundary Spanning: Questioning
	Interdependence	Relevance of Non-Participants

APPENDIX F

**Initial Stakeholder Positions**

<b>Utility Name</b>	<b>Position</b>	<b>Position 2</b>	<b>Ownership</b>	<b>RTO</b>
Southwestern Power Group	Advisory - Support		Power Marketer	SOUTHWEST
Pacific Gas & Electric Co	Advisory - Support Transition		Investor Owned	CAISO
Southern California Edison Co	Advisory - Support Transition	Autonomous - Oppose	Investor Owned	CAISO
Xcel Energy Inc.	Advisory - Support Transition	Autonomous - Oppose	Investor Owned	SOUTHWEST
Avista Corp	Autonomous - Support	Advisory - Opposed	Investor Owned	NWPP
Northwest Public Power Association	Autonomous - Support		Public Power	NWPP
Portland General Electric Co	Autonomous - Support		Investor Owned	NWPP

<b>Utility Name</b>	<b>Position</b>	<b>Position 2</b>	<b>Ownership</b>	<b>RTO</b>
Powerex	Autonomous - Support		Power Marketer	CANADA
Public Power Council	Autonomous - Support		Public Power	NWPP
Chelan County	Autonomous - Support		Public Power	NWPP
Seattle City Light	Autonomous - Support	Advisory - Opposed	Public Power	NWPP
Western Grid Group	Autonomous - Support	Autonomous - Support	Public Interest - Environmental	BOTH
Interwest Energy Alliance	Delegated - Support		Renewable Generators	SOUTHWEST
PacifiCorp	Delegated - Support	Autonomous - Oppose	Investor Owned	SOUTHWEST
Six Cities	Delegated - Support	Autonomous - Oppose	Public Power	CAISO
Sonoran Institute	Delegated - Support		Public Interest - Environmental	BOTH

<b>Utility Name</b>	<b>Position</b>	<b>Position 2</b>	<b>Ownership</b>	<b>RTO</b>
Vote Solar	Delegated - Support		Public Interest - Environmental	BOTH
Western Resource Advocates	Delegated - Support		Public Interest - Environmental	BOTH
Arizona Public Service Co	Delegated - Support Transition	Advisory - Opposed	Investor Owned	SOUTHWEST
California Municipal Utilities Association	Delegated - Support Transition	Advisory - Opposed	Public Power	BOTH
Eugene Water & Electric Board	Delegated - Support Transition	Autonomous - Support	Public Power	NWPP
Public Utility Commission of Nevada	Delegated - Support Transition		Regulator	SOUTHWEST

<b>Utility Name</b>	<b>Position</b>	<b>Position 2</b>	<b>Ownership</b>	<b>RTO</b>
Puget Sound Energy	Delegated - Support Transition		Investor Owned	NWPP
Renewable Northwest	Delegated - Support Transition	Autonomous - Support	Public Interest - Environmental	NWPP
American Wind Energy Association	No Stated Model Preference		Renewable Generators	BOTH
California Office of Ratepayer Advocates	No Stated Model Preference		Public Interest - Ratepayers	CAISO
California Public Utilities Commission	No Stated Model Preference		Regulator	CAISO
Wyoming Public Service Commission	No Stated Model Preference		Regulator	SOUTHWEST

APPENDIX G

**Comparison of U.S. Regional Transmission Organizations**

	<b>CAISO</b>	<b>ERCOT</b>	<b>ISO-NE</b>	<b>MISO</b>	<b>NYISO</b>	<b>PJM</b>	<b>SPP</b>
<b>Jurisdiction</b>	Single state (~80% of CA and small part of NV)	Single state not synchronously interconnected	Six states	All or parts of 15 states and one province	Single state	All or parts of 13 states and DC	14 states
<b>Energy Market Operation</b>	1998 Wholesale	2002 Retail 2003 Wholesale	1999 Wholesale	2005 Wholesale	1999 Wholesale	1997 Wholesale	2007 Imbalance 2014 Wholesale
<b>Incorporation</b>	501 c (3) public benefit status	501 c (4) community welfare status	501 c (3) public benefit status	501 c (4) community welfare status	501 c (3) public benefit status	LLC	501 c (3) public benefit status
<b>Market Participants</b>	100+	160+	400+	175+	400+	>960	93
<b>Population Served</b>	~30 million	~ 23 million	~14 million	~48 million	~19.5 million	~ 61 million	~18 million

	<b>CAISO</b>	<b>ERCOT</b>	<b>ISO-NE</b>	<b>MISO</b>	<b>NYISO</b>	<b>PJM</b>	<b>SPP</b>
<b>Generation Capacity</b>	60,000 MW	75,964 MW	31,000 MW	180,711 MW	39,000 MW	171,648 MW	78,953 MW
<b>Peak Demand</b>	50,000 MW	69,600 MW	28,000 MW	127,100 MW	31,100 MW	165,500 MW	45,300 MW
<b>Transmission Lines</b>	26,000 miles	46,500 miles	8,500 miles	65,800 miles	11,000 miles	>81,000 miles	60,000 miles
<b>Transmission Owners</b>	18	8 <sup>a</sup>	21	48	8	14 voting 38 affiliated	43
<b>State Regulator Relationship</b>	State Governor Appointment of Board	State PUC Oversight	NE States Committee on Electricity and NE Conference of Public Utilities Commissioners	Organization of MISO States	State PUC Oversight	Organization of PJM States	Regional State Committee

	<b>CAISO</b>	<b>ERCOT</b>	<b>ISO-NE</b>	<b>MISO</b>	<b>NYISO</b>	<b>PJM</b>	<b>SPP</b>
<b>Authorization</b>	1996 = California Stat. 1997 = FERC	1995 = Texas Stat.; Not subject to FPA §203, 205, 206	1997 = FERC	2001 = FERC	1998 = FERC	1997 = FERC	2004 = FERC
<b>History</b>	Not a power pool legacy	Texas Interconnection System (1941); ERCOT (1970)	New England Power Pool (1971); ISO (1997); RTO (2005)	Not a power pool legacy	New York Power Pool (1965)	PJM Power Pool (1927); ISO (1997) RTO (2002)	Southwest Power Pool (1941)
<b>Industry Structure: Output from Independent Power</b> <sup>b, c</sup>	41% = CA	57% = TX	> 66% = 5 states <sup>4</sup>	33% = 12 states  >33% < 66% = TX  >66% = IL, MT	62% = NY	< 33% = 7 states  >33% < 66% = WV  >66% = DE, IL, MD, NJ, PA	< 33% = 12 states  >33% < 66% = TX  >66% = MT

	<b>CAISO</b>	<b>ERCOT</b>	<b>ISO-NE</b>	<b>MISO</b>	<b>NYISO</b>	<b>PJM</b>	<b>SPP</b>
<b>Industry Structure: Sales from Retail Power Marketers</b> <sup>b, c</sup>	8% = CA	61% = TX	Zero = VT <sup>4</sup>  < 33% = MA, NH  >33% < 66% = CT, ME	Zero = 11 states  < 33% = IL, MI, MT  >33% < 66% = TX	25% = NY	Zero = 6 states  < 33% = DE, IL, MD, MI, NJ, OH  >33% < 66% = PA	Zero = 11 states  < 33% = MI, MT  >33% < 66% = TX
<b>Curtailement of Variable Generation</b>	Dispatchable and non-dispatchable variable generation	Dispatch based on market offer	Curtaile generation without day-ahead commitment	Dispatchable and non-dispatchable variable generation	Dispatch based on market offer	Dispatch based on market offer	Dispatchable and non-dispatchable variable generation
<p>SOURCES: (Borenstein &amp; Bushnell, 2015; California Independent System Operator, 2015; Electric Reliability Council of Texas, n.d.; Federal Energy Regulatory Commission, n.d.-a; Fernandez, 2011; Independent System Operator of New England, n.d.; Midcontinent Independent System Operator, n.d.; New York Independent System Operator, n.d.; PJM Interconnection, n.d.; Potomac Economics, 2016; Southwest Power Pool, n.d., 2014; Utility Variable Generation Integration Group, 2015)</p>							