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Extended Producer Responsibility and the Environmental Policy Implementation Process in California: A case study of Paintcare

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EXTENDED PRODUCER RESPONSIBILITY AND THE ENVIRONMENTAL POLICY IMPLEMENTATION PROCESS IN CALIFORNIA: A CASE STUDY OF PAINTCARE

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ABSTRACT

EXTENDED PRODUCER RESPONSIBILITY AND THE ENVIRONMENTAL POLICY PROCESS IN CALIFORNIA: A CASE STUDY OF PAINTCARE

by Justin Weiss

Due to increasing volumes of certain types of waste and the cost of municipal waste management, California and local jurisdictions are pursuing legislation to engage manufacturers in the collection and disposal of the products they manufacture. These legislative frameworks take many forms, but many employ the “producer pays” principle commonly referred to as “extended producer responsibility” (EPR). These policies, which are more common in the European Union, are often contentious and difficult for U.S. governments to pursue, as targeted and influential industries resist policy implementation. The objective of this thesis was to better understand the reasons for the successful implementation of EPR in California, using waste paint as a case study. Using the lens of "policy stream" theory, this study of EPR can result in a better understanding of the considerations at play in California, offering an informative roadmap to implement similar waste management strategies in other places and with other products. The results indicate that (1) a lengthy stakeholder dialogue process, and (2) a growing social awareness surrounding the targeted waste stream, were the most influential factors in enabling waste paint policy streams to move toward successful implementation. These factors should be central to developing EPR policy strategies in California.

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INTRODUCTION

According to the U.S. Environmental Protection Agency (EPA), municipal solid waste generation increased from 3.66 to 4.48 pounds per person per day in the United States, a 33.33% increase between 1980 and 2015. Within the same time period, U.S. recycling rates for municipal solid waste increased from 9.6% to 34.7%. Increasing recycling rates are indicative of a progressive movement by society toward more responsible resource management strategies. However, recycling initiatives undertaken at a products end-of-life are limited in effectiveness due to high material flows that ultimately require preemptive actions (Haas et al. 2005). Recent waste management efforts in California, particularly since the passage of California Assembly Bill (AB) 939 in 1989, have instilled progressive waste management approaches and goals. Simply focusing on end-of-life management of products does not remedy the problem at the source, but rather seeks to implement corrective measures once the product is ready to enter the waste stream. Dealing with these end-of-life products has primarily fallen on local municipalities, producing a system that is costly to the public and essentially externalizes a product's end-of-life cost onto the natural environment and society. Transformative change requires increased emphasis on internalizing these costs through source reduction and redesign. Such change requires a shift in cultural and economic norms, perpetuated by legal mandates and innovative local policies.

Innovative legislative strategies have become common tools to mitigate negative end-of-life impacts associated with certain product categories. One of these waste management strategies, extended producer responsibility (EPR), is a legislative

framework which requires financial and logistical responsibility of product manufacturers, ultimately aiming to force manufacturers to internalize end-of-life costs and material disposal into their products cost (Kalimo et al. 2015). Swedish academic Thomas Lindhqvist's first introduced the concept of EPR, also known as the "polluter pays" principle, in his report to the Swedish Ministry of the Environment (Lindhqvist 1989). EPR has seen global application within the last 25 years, with the German Packaging Ordinance of 1991 marking the first iteration of the policy in action (Khetriwal et al. 2011). While many European governments have embraced this principle, the United States has only a sparse set of EPR-based policies across numerous states and no comprehensive policy on a national scale. Limited implementation within the U.S. can be linked to a multitude of factors, ranging from a greater landmass available for disposal, to Americans' obsession with individualism and the resulting political and institutional hurdles (Sachs 2006).

Waste management legislation requiring more financial and logistical responsibility from product manufacturers is often resisted by industry stakeholders, as many businesses have developed a hierarchy that benefits from externalizing this cost, neglecting waste as an asset. This ethos from the manufacturing industry has increased the appeal of regulations mandating product take-back or other waste reduction methodologies (Castell et al. 2014). Progress instituting EPR principles into the California waste management agenda has been limited, as the policy formation and implementation process involves numerous, often competing, agendas and philosophies (Short 2004).

California lawmakers targeted paint for an EPR-based policy framework because waste paint was banned from landfill disposal by CalRecycle, a branch of California's Environmental Protection Agency which oversees waste management and recycling. Due to the ban, local government was required to divert and manage the waste stream with local taxpayer funded household hazardous waste (HHW) collection programs. In 2001, the California Integrated Waste Management Board (CIWMB) found that, "Waste paint represents one-third of total HHW collection costs and comprises over 42% of the materials collected." (CIWMB Board Meeting, Meetings Document Archive) In the same report, agency staffers noted that:

> HHW collection reports also show that only about 5% of California households participated in HHW collection opportunities in 1998/1999. This low service level leads one to conclude that there is at least a 20-year demand for HHW collection service, without considering population growth, economic growth and housing starts etc. (CIWMB Board Meeting, Meetings Document Archive)

This low level of participation coupled with large stockpiles of the waste, led to a conclusion that significant quantities of waste paint may be illegally disposed of as disposal service levels do not match demand. These discussions on waste paint take-back in California were subsequently followed by a national dialogue with the paint industry coordinated by the Product Stewardship Institute (PSI). Five years of dialogue talks resulted in the 2010 passage of the California Architectural Paint Stewardship Law (CAPSL), or California Paint Stewardship Law (CPSL), requiring the paint industry to establish a statewide program for collection and disposal of waste paint.

These stakeholder dialogues and government advocacy led to a tipping point at which actors felt that legislative action was necessary to reduce the burden on local

jurisdictions. In fiscal year 2017-2018, the 6th year of the EPR program, the PaintCare Annual Report stated 3,881,913 gallons of waste paint were collected. The implementation and resulting collection volumes for this EPR framework are viewed by many stakeholders as satisfactory in terms of cost alleviation and collection volumes; however, factors which enable a product category to successfully achieve policy implementation are often contingent on specific factors of time and place (Gui et al. 2013). The factors that resulted in the successful development of the waste paint EPR-based implementation process have not been clearly identified or explained.

Successful political efforts to implement EPR-based legislation require a multitude of factors to align within the local political setting. John Kingdon's theory of policy streams suggests that implementation of legislation requires "three categories of independent (and interdependent) variables that interact to produce "windows of opportunity" for agenda setting." (Beland and Howlett 2016, 2) More specifically, these policy streams consist of the problem, a proposed legislative solution, and political will to enact change. Merging of policy streams can be facilitated by a variety of interacting influences, but will ultimately require formation of a multi-stakeholder coalition willing to engage in discourse on the identified issue. This political coalition allows involved parties to create a productive atmosphere where ideas and solutions can be teased out. National, state and local policies striving to institute EPR-centric environmental agendas are becoming more common within U.S. jurisdictions (Sach 2006). Within each jurisdiction, and dependent on the specific product category targeted, "multiple dimensions of environment, economics, politics, and operations come into play, and the differences among them

create challenges in achieving an efficient balancing of environmental and economic trade-offs." (Gui et al. 2013, 12) EPR policies offer integral tools for a more holistic approach to waste management, yet the ability to implement these policies vary due to the specific product category targeted and the array of concerned stakeholders (Gui et al. 2013).

This research provides insight into what Pohle (2013, 1) terms the "black box" of policy making, by determining key factors which have facilitated or hindered the policy implementation process of the CPSL. Tracing movement through the implementation process highlights factors that enabled an EPR-based framework to be developed for waste paint, when other product categories have struggled or failed to achieve implementation. A detailed roadmap, built upon stakeholder interpretations of the issue and subsequent actions taken, can be used to provide an understanding of how and why the waste paint policy implementation process was successful. Recognition and interpretation of the legislative causes and effects can better inform future EPR policy formation processes for other products categories in California and elsewhere in the U.S.

Literature Review

Extended Producer Responsibility: An Overview

The origins of the EPR principle can be traced back to the early 1990s when Thomas Lindhqvist coined the term in his report to the Swedish Ministry of the Environment, and produced the following definition: "...an environmental protection strategy to reach an environmental objective of a decreased total environmental impact from a product, by making the manufacturer of the product responsible for the entire life-cycle of the product and especially for the take-back, recycling and final disposal of the product."

(Lindhqvist and Lidgren 1990, 2) In 1991, Germany instituted the first operational EPR-based program, known as the Avoidance of Waste Packaging Ordinance, translated as the "Toepfer Decree." (Short 2004) Over time, EPR programs were implemented in countries across the globe for a multitude of product categories, with special attention given to electronics, batteries, compact fluorescent lightbulbs and paint. EPR programs throughout Europe represent the some of the more idealistic incarnations of the philosophy compared to programs in the United States. European iterations were designed to promote institutional transformation toward sustainability within the business sector, much more so than current iterations within the United States (Sachs 2006).

The most fundamental principle of EPR is that producers should be held accountable for their product's end-of-life logistics and cost (Lifset 1993). While this principle presents itself in all versions of EPR-based programs, in actuality, some EPR-based programs implement an approach in which costs and logistics are shared between industry and other involved parties. This is a topic of much contention amongst EPR scholars, as disagreements abound over whom among products' chain of custody should bear substantial portions of end-of-life costs. Some EPR supporters believe producers should bear the entire cost of collection and recycling via a financial guarantee from manufacturers (Van Rossem et al. 2006). Others believe all actors across the product's life cycle should contribute, including manufacturers, retailers, municipalities, and consumers (Wiesmeth and Hackl 2011). Regardless of the cost-share approach, once producers are required to deal with end-of-life responsibility, they have increased motivation to engage other members who interact with the product throughout its

lifecycle (Kumar and Putnam 2008).

Government institutions in the U.S., specifically at the state and local level, have started to embrace EPR principles as a means to alleviate financial and logistical burdens. Between 2008 and 2011, states enacted 40 laws that stipulate varying degrees of EPR principles (Nash and Bosso 2013). This figure is greater than half the number of EPR laws enacted within the two prior decades. EPR initiatives in the U.S. have not been embraced at the federal level, but have flourished at the state and county levels, employing a variety of frameworks for various product categories (Atasu and Subramanian 2012). A small portion of states, including California, have instituted EPR on a grandeur scale, while the others have been more reluctant. State-based EPR programs adopted across the U.S. reflect different strategies and requirements, resulting in a "patchwork" of programs (Buseman 2012, 4). This divergence in operational details reflects the various socio-political outlooks and underlying environmental ethos of each jurisdiction attempting to enact a program (Hickle 2014). This variation in what constitutes an "EPR" program can be further exemplified by the divergence in EPR definitions generated by engaged stakeholders.

Collective Responsibility and Its Implications

A term similar to EPR that began to be explored in policy is product stewardship (PS). PS is understood to be similar to, but separate from EPR, though some use the two terms interchangeably. For example, CalRecycle defines EPR on their website as:

> Also known as Product Stewardship, is a strategy to place a shared responsibility for end-of-life product management on the producers, and all entities involved in the product chain, instead of the general public; while encouraging product design changes that minimize a negative impact on human health and the environment at

every stage of the product's lifecycle.

According to Thorpe et al. (2004), within PS programs the allocation of shared responsibility can be divided in a very particular manner. Manufacturers must establish infrastructure, consumers pay recycling fees and are responsible for product drop-off. Retailers should promote awareness and facilitate collection. Lastly, municipalities will set guidelines and provide light regulation. Under a legislative framework aligned with PS, the regulated industries often form a producer responsibility organization (PRO) to handle all logistics of the implemented PS law. The PRO manages the take-back responsibilities as a single entity, acting as a liaison, effectively translating the legislation into action for the targeted manufacturers (Walls 2006). Examples of PROs include the Rechargeable Battery Recycling Corporation and the American Coatings Association representing the paint industry. By not singling out any specific companies, the financial and logistical burdens of the program are spread across industry members (Atasu and Subramanian 2012). These overarching non-profit organizations facilitate the formation of an operational EPR program within the convoluted modern political and business atmosphere. However, the formation of these organizations can undermine some key EPR policy goals.

The product stewardship framework, within which PROs operate, eliminates much of the incentive to redesign and streamline processes and can only be conceived of as an efficient management strategy for the growing waste stream (Nicol and Thompson 2007). Lack of a domestic, federal mandate on EPR legislation has enabled industry manufacturers to band-together and limit government oversight at the first site of action

at the state level (Nash and Bosso 2013). Battery manufacturers, after witnessing the implementation of EPR laws in Minnesota and New Jersey, hoped to avoid wide sweeping mandates by coming together to form the Rechargeable Battery Recycling Corporation (RBRC), ultimately resulting in the formation of a PRO (Nash and Bosso 2013). On their website, CalRecycle states the goal of EPR is "to reduce the cradle-to-cradle impacts of a product and its packaging." The term "cradle-to-cradle" suggests complete lifecycle awareness and responsibility. However, when crafting legislation, these broad goals are often unaddressed, resulting in a failure to institute detailed and prescriptive approaches which could yield a more beneficial range of economic and environmental outcomes (Duetz 2009).

Transformative EPR: Individual Producer Responsibility & Policy Tools

Holding product manufacturers accountable, industry could theoretically lower all subsequent costs tied to EPR legislation if they redesign their products for ease of recycling (Sachs 2006). This incentive and outcome is described as a type of "holy grail" for EPR programs. While the design for the environment (DfE) approach, as its often termed, is an intended consequence of EPR implementation, actually creating this action is elusive throughout EPR programs and is not well-documented in relevant academic literature. Atasu and Subramanian (2012) looked at details of specific EPR program implementation and how they impact potential redesign of products to increase collectability and recyclability. They found that under most current EPR systems, manufacturers form PROs' as producers then share the costs of collection and disposal, ultimately an approach that does not provide incentives to redesign products (Zeynalova

2017).

A report by the INSEAD IPR Network explores the current iteration of the Waste Electrical and Electronic Equipment (WEEE) Directive in Europe and how, if any, it has fostered design changes in electronics (Atasu and Van Wassenhove 2010). The Directive explicitly states individual producers should be held responsible for their waste, as all producers collectively finance the cost of the program. The result has been a self-acknowledged failure in the WEEE Directive as the shift of responsibility toward individual entities has not fostered DfE. Individual producer responsibility (IPR) is touted as the necessary tool to promote DfE and is often labeled as unfeasible in application. However, a 2006 report commissioned by GreenPeace titled, "EPR: An Examination of its Impact on Innovation and Greening Products" looks to define connections between the legislative framework and DfE. The report identified three maxims to promote this desired shift:

1. Secure financial guarantees from industry to cover future waste costs,
2. Internalize the full costs of end-of-life, including collection, which in many countries continues to be subsidized by municipalities; and
3. Ensuring that the economic signal from treatment and recycling reflects the full costs of high-quality material recycling.

Many of the current EPR-based programs in the United States lack definitive legislative language stipulating full cost allocation to industry, increased reuse market development, and complete cost internalization. Regulations that aim to create a specific outcome can only be implemented if political actors express the will to enact the specific instruments. If EPR legislation is to better promote sustainability, specific goals must be

determined prior to selecting the specific policy instruments for implementing them (Walls 2004). Such sustainability policy goals, or outcomes, can include the following: "(1) reduction in waste volumes generated; (2) reduction in waste disposed; (3) reduction in hazardous constituents in the waste stream; (4) decrease in virgin material use; (5) lowering of pollution in the production stage; and (6) increased DfE." (Walls 2006) Different stakeholders will undoubtedly advocate for different goals and therefore subsequent policy instruments aligned with their desired outcomes. Environmental policy instruments can more thoroughly be defined as, "…structured activities aimed at changing other activities in society to achieve environmental goals in a particular time schedule." (Vagt et al. 2009, 254) Depending upon the quantity and types of specified goals determined by political stakeholders, EPR-based laws may require a robust suite of tools to create all desired outcomes.

A report on EPR policies and product design by Walls (2006) identifies a variety policy approaches which promote EPR. These include:

- Product take-back mandate and recycling rate targets;
- Product take-back mandate and recycling rate targets, with a tradable recycling credit scheme;
- Voluntary product take-back with recycling rate targets;
- Advance recycling fees (ARF); and
- ARF combined with a recycling subsidy.

Walls (2006) notes that while these broad policy instruments impose financial and logistical responsibility onto the producer, each has different incentives and can therefore lead to different environmental outcomes with different financial costs. More specific and pointed EPR-based policy instruments, which would be housed within the previously identified program frameworks, identified by Van Rossem et al. (2006), are a listed in

Table 1.

Table 1. Examples of EPR-based Policy Instruments

Administrative Tools	-Collection and/or take-back of discarded products -Substance and landfill restrictions -Achievement of collection -Re-use (refill) and recycling targets -Fulfilment of environmentally sound treatment standards -Fulfilment of minimum recycled material content standards -Product standard
Economic Tools	-Material/product taxes -Subsidies -Advance disposal fee systems -Deposit-refund systems -Upstream combined tax/subsidies -Tradable recycling credits
Informative Tools	-Reporting to authorities, -Marking/labelling of products and components, -Consultation with local governments about the collection network -Information provision to consumers about producer-Responsibility/source separation, Information provision to recyclers about the structure and substances used in products

Implementing environmental policy frameworks and specific policy tools will often be points of overt contention between legislative stakeholders. Environmental regulation in the United States differs from their European counterpart as U.S. citizens tend to be more individualistic and the U.S. political system is more resistant to environmental regulation as compared to parliamentary systems (Verweij et al. 2000). Within the United States system of governance many factors must align to allow EPR-based legislation to pass, particularly legislation containing contentious policy instruments and intentions.

Environmental Policy: Obstacles and Opportunities

As environmentalism has become a prominent issue, the institutional and political drivers of change have subsequently evolved. California has enacted many environmental laws intended to protect the health and safety of people and the environment; however,

simultaneously, specific environmental policy initiatives have been met with steadfast resistance from a multitude of affected stakeholders. Post and Altma (1994) identify three distinct forms of environmental protection within a policy context. The first emerged at the cusp of the environmental movement of the 1970s and is a compliance-based approach, in which governments impose restrictions and penalties upon industry behavior that does not conform to environmental expectations. This approach mandates that industry meet certain requirements aimed at lessening negative impacts on the environment. This tactic is also known as the "stick" approach because it motivates toward compliance through fear of penalty. Alternatively, the "carrot" or market-based incentive, gives industry more autonomy, as government establishes benchmarks for industry to meet through their own means. Using these market incentives to encourage ecologically responsible behavior allows industry to determine how they will reach benchmarks set by regulations. This approach allows industry to design the program with government providing benchmarks and oversight, but may lack accountability in terms of quantifiable changes. Most recently, value-driven environmental protection has emerged as more individuals and consumers are consciously making choices that reflect their environmental values. This growing collective of consumers has increasingly been a force in requiring industries to account for the externalities of their actions. Today, all three forms of environmental protection have established themselves as prominent tools in the political-environmental arsenal of change. While value-driven environmentalism does not directly require government intervention, compliance and market-based approaches require government to pass legislation, which can be a contentious agenda to

pursue.

Policy Streams Model

Successful creation and implementation of legislation requires that a multitude of factors align. Substantial literature exists which assesses the factors that influence the ultimate passage of legislation. Cohen, March, Olsen (1972) stated that organizations, utilizing universities as a case study, do not act in a rational manner when it comes to decision making processes, rather they react to the influences of numerous streams imparting pressures upon them. This theory became known as the garbage can model (GCM) of organizational choice. Within the model, problems, solutions and decision-makers come together at a "choice opportunity". This choice opportunity is any point at which a decision will or needs to be made and is represented as a garbage can due to the problem, solution and decision-makers being placed into the can randomly, potentially forming a variety of outcomes. Later, Kingdon (1984) applied this decision-making protocol to U.S. national policymaking processes within the fields of healthcare and transportation, generating a model consisting of three streams, or influences on the policy implementation process. These three streams include, the problem, the politics, and the policy.

Each of these streams is independent of the other and is influenced by a variety of stakeholders and influences, all of which play a role in policy development and implementation. The problem stream is the perceived social issue or problem that is to be remedied through policy intervention. Kingdon (1995) stresses that a division must be acknowledged between a perceived problem and a condition, "Conditions sometimes

become problems when they conflict with prevailing values. Uneven access to health care is or is not a problem, for instance, depending on whether one thinks of health care as a right." (Wilson 1993, 8) Once an issue is perceived as a problem necessitating legislative intervention, concerned stakeholders can focus on policy details to create the desired change.

The policy stream is the detailed legislative solution targeted to solve the societal dilemma. Ideas on what a particular policy solution will entail can vary across the broad spectrum of concerned stakeholders. Kingdon (1984, 3) likens this process to a "policy primeval soup," representing various ideas floating around and bumping into subsequent solutions, as change often represents a recombination of familiar ideas. In order for the policy framework to achieve implementation the details must be feasible, both logistically and financially, and the proposal must be acceptable to the engaged stakeholders. Lastly, the politics stream consists of lawmakers, the specific policies they support, and the level of political support or will to advocate. The administration in power or changes in partisan or ideological values of governing bodies will influence what policies can be pursued and which will be stalled. A strong social outcry perpetuated by a focusing event, such as an airplane crash, can create the necessary momentum and focus to implement policies to mitigate transportation safety concerns (Wilson 1993).

When these three independent streams merge, rather when political actors are able to communicate, compromise, and agree on a legislative framework, policy agendas can move forward through policy "windows of opportunity." (Kingdon 1995, 1) Progress

through the initial "window of opportunity" marks the end of what Kingdon terms the agenda-setting phase, a point at which, "The separate streams of problems, policies, and politics come together at certain critical times. Solutions become joined to problems, and both of them are joined to favourable political forces." (Kingdon 1984, 21) The agenda-setting phase marks the point at which the issue has gained enough political momentum to be a substantive fixture within the public policy debate.

Kingdon's (1984) policy streams model evolved through the years and was labeled the multiple streams (MS) model by Zahariadis (2003, 2007) to incorporate elements to the model, while clearing up underlying assumptions. Still criticisms arise out of the field of study, with Bendor et al. (2001) criticizing the separation of the problem and policy streams. They contend that problems and solutions do not arrive as separate entities, but are rather simultaneously, attached to participants who flow in and out of the streams. Kingdon (1995) defended his assertion that all three streams are independent by detailing the different participants in both the policy and politics streams. The policy stream (nonprofits, think tanks) consists of focused specialists who present data and proposals, while the political stream consists of a small group of elites who must focus on a broad range of issues to satisfy their political party and constituents. Kingdon (1995, 122) introduces what he terms "policy entrepreneurs" and clarifies their role "…much as in the case of a business entrepreneur, is their willingness to invest their resources—time, energy, reputation, and sometimes money—in the hope of a future return." (Kingdon 1995, 122) This entrepreneur can be an individual or organization and is defined by four keynote characteristics: "displaying social acuity, defining problems, building teams, and

leading by example." (Mintrom 2009, 4) The entrepreneur is crucial in keeping the implementation process from entering points of stagnation and maintaining momentum toward a final settlement.

Moving forward in the evolution of policy stream theory, Howlett et al. (2015) states that Kingdon's (1984, 1995) streams metaphor is only representative of the policy agenda setting process because, as critics (Zaharidias 2003, 2007, Bendor et al. 2001) have noted, the theory overtly relies on contingency and circumstances of chance. The authors state that the convergence of streams within the agenda setting "policy window" facilitates a new coalesced stream, moving forward through an abundance of "policy windows" encountered throughout the policy-making and decision-making processes. This large, piecemeal stream is part of what Howlett et al. (2015) calls the five-stream confluence model. This model is built upon the aforementioned organizational choice and policy stream models, but looks to account for disruptive forces that may enter and leave the policy implementation process at a multitude of confluence points. Within the five-stream model, once Kingdon's (1984) three streams have merged, enabling a policy agenda to be established, two additional streams enter the central flow of the process. The first stream, the "process", establishes the general logistical realities of the policy agenda, such as vote dates and public comment periods. Secondly, the "programme" stream, consists of any preconceived or newly introduced policy tools which may be contentious amongst involved stakeholders.

As these five streams flow through policy creation, development, and implementation, a dominant stream will assert itself as most influential, essentially

absorbing and guiding the other streams forward. For example, a dominant problem stream would see science and rational thought prevailing against economic or political concerns, as the cause and subsequent solution may be clear, but politically unpopular (Howlett et al. 2015). Additionally, as these streams progress, they can enter into points at which progress can be impeded. These points represent contentious interactions, new revelations, additional stakeholders entering the process, or any other disruptive forces that may limit the ability of policy streams to merge. The process also enters "appraisal" points or "whirlwinds" after passage through significant confluence points (Howlett et al. 2015, 7). Appraisal points can represent uncertainty on how to proceed and may be influenced by new policy actors or processes, such as a public comment period, which introduces new ideas or raises objections to existing thoughts (Howlett et al. 2015). These appraisal points require stakeholders to remain diligent and dedicated to ensure momentum is maintained toward policy development and implementation. If no means to proceed through an appraisal point can be reached, the policy implementation process will stall until confluence of streams can be achieved. The complete five-stream confluence model is illustrated in Figure 1.

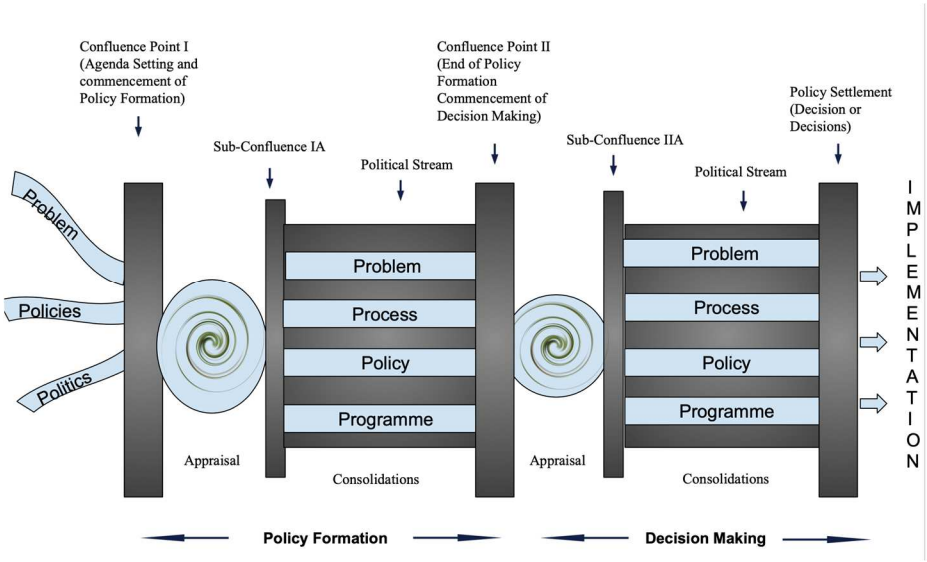

Figure 1. Five stream confluence model (example of dominant political stream). Adapted from Howlett et al. 2015.

Within the United States, the ability of policy streams to merge and procced to implementation within the context of environmental agendas has produced varied levels of success. California is often cited as domestic leader in environmental policy, as was the case when the state banned brominated flame retardants (BFRs) prior to action being taken at the national level (Daub 2004). Focusing on the issue of waste, the state has implemented five laws which they categorize as "producer responsibility." This number is amongst the highest of any state, further demonstrating the high capacity for the state of California to spearhead environmental policies, while other states may fail to proactively act on these matters. Yusuf et al. (2015) looked to understand why the issue of sea level rise continually failed to establish prominence on the Virginia policy agenda. It was found that the inability of a policy window to emerge was due to more prominent legislative concerns, coupled with lack of a clear policy solution and concern among the state population. Within California, Dahm et al. (2013) found that continued perseverance

in the field of river conservation, through frequent presentations to stakeholders and coalition building amongst peers, was crucial in enabling legislation to achieve implementation. Despite California's forward thinking approach to waste management, implementation of EPR-based policy is a contentious issue which has encountered varying levels of success, for various product categories. The policy stream approach can help us better understand the case study of waste paint policy within California.

Problem Statement and Research Questions

Local waste management jurisdictions throughout California have engaged manufacturers in collection and disposal of the products they produce due to high disposal costs, landfill bans on certain types of waste, and a growing culture of environmental consciousness among the public and lawmakers. This policy movement has flourished in certain geo-political contexts; however, resistance from affected industries and certain policy actors has hampered framework implementation across the state. Currently, California has five laws it categorizes as "producer responsibility," along with a multitude of programs utilizing various EPR principles in their respective frameworks. While this range of implemented EPR-based frameworks is among the highest of any state, California EPR stakeholders still engage in a contentious policy implementation process.

Passage of the CPSL in 2010 marked the implementation of a comprehensive EPR-based policy, targeting one of the largest hazardous waste product categories in the state. The policy implementation process required years of stakeholder meetings, negotiations, and political will, to produce a functioning program. Perceptions of an environmental

"problem" and subsequent "solution" will vary depending on the specific stakeholder perspective and often implementation hinges on a combination of economic, legal and political factors (Howes et al. 2017). These various interpretations make the process of crafting legislative language and final implementation contingent upon achieving points of consensus, a "policy window," within the policy implementation process (Kingdon 1984).

This research will identify and analyze the key factors that were important in enabling policy streams to merge for waste paint regulation, ultimately producing a robust EPR-based policy. While there is significant research on EPR principles and the implications of implemented policies, few studies have investigated the factors which facilitate and hinder EPR policies from inception to implementation. Identification and analysis of these influential factors for waste paint can generate informative insight on EPR policy trends in California. Additionally, this research sought to identify characteristics that make certain product categories more amenable to completion of the California policy implementation process. This analysis was designed to identify key characteristics of targeted product categories that are influential in the California EPR policy implementation process and which might be influential in other settings.

To address these objectives, I assessed the following research questions by examining the case study of the California Paint Stewardship Law (or, "PaintCare") against characteristics and outcomes described in the literature, along with an analysis of the waste paint implementation process through the lens of the policy streams model:

1) What key factors enabled the policy framework development and implementation of the California Paint Stewardship Law?

2) What are the prominent issues of contention encountered during the California Paint Stewardship Laws movement through the five stream confluence policy stream model?

3) What characteristics make some product categories more amenable to EPR policy implementation than others?

Methods

Study Design

This research takes the form of a qualitative, open ended, non-experimental case study. Case study methodology is an analysis framework which assesses real world phenomena within a clearly defined system, with data collection undertaken through observations and/or in-depth interviews (Creswell et al. 2007). This type of research can produce in-depth roadmaps for understanding complex and interrelated conditions within a particular phenomenon (Yin, 2011). According to Yin (1994) case study methodology is employed when:

a) The study looks to answer questions of "how" and "why" of a phenomenon.
b) Manipulation of participant behavior cannot be undertaken.
c) Contextual conditions are highlighted as a means to understand the phenomenon under study.

This case study focuses on the policy formulation and implementation process of the CPSL. The case is bounded by the investigation of laws and actors within the waste paint management policy realm, with special focus given to implementation of the framework in California. This case study will be guided by adherence to an "instrumental" structure (Stake 1995, 2), in which investigation of the case serves to inform the broader context in which stakeholders enter and impact the environmental-political sphere. This structure looks to understand how these distinct understandings of the problem and solution influence the political process and subsequent outcomes. Case study research often

employs multiple modes of data collection, including systematic interviews and document analysis, both of which are utilized in the study (Yin 1994).

A portion of this research employed content analysis, utilizing an analysis framework of the five stream confluence policy stream model, of documents generated within two predominant phases encountered during the CPSL implementation process. The first phase, known as agenda setting, consists of the preliminary national dialogue process and resulting memorandum of understanding (MOU) produced by a multitude of involved stakeholders; this phase essentially established the foundation of CPSL's legislative framework. The second phase consists of analysis of public comment documents produced during the rulemaking period of CPSL. These documents illuminated points of stakeholder divergence as to how the law would operate. Analysis of these documents provided insight into the specific points of contention and consensus encountered during the latter portion of CPSL's implementation process.

Additionally, semi-structured interviews provided more in-depth understanding of real world experiences encountered by California waste management actors. The interviews complemented the document content analysis by providing insight beyond the specifics encountered during the CPSL implementation process. Interview data represent experiences and interpretations of stakeholders directly engaged with waste management and policy initiatives in a professional capacity. The interview questions (Appendix A) were designed to provide an understanding of why this EPR-based law was pursued, insight into what the participants intend to achieve, and to identify perceived obstacles to implementation. Open-ended interviews were structured to allow for definitive accounts

to be recorded, while enabling personal interpretations to emerge.

Case Study Selection

This is a case study of California waste management policy. More specifically, this research evaluates the conditions for the successful passage and implementation of PaintCare, a legislatively mandated program to ensure proper end-of-life management of paint. Paint was chosen for investigation due to the prevalence of its use by California residents and the subsequent volume and cost encountered by local government HHW programs. In California, waste paint, both latex and oil based, is banned form landfill disposal and categorized as a household hazardous waste. In 2001, the CIWMB discussed an agenda item titled "For Improving Waste Paint Management In California." Staff stated that "Waste paint represents over 42% of all household hazardous wastes (HHW) collected and amounts to over 35% of local HHW management costs. Additionally, waste paint volumes collected have grown by over 20% annually for the last several years." The growing volume coupled with collection and disposal costs created a strong case for a legislative framework for end-of-life management. These high collection numbers and costs increased due to government efforts to collect and divert HHW from the municipal solid waste stream as mandated by state laws and local zero waste initiatives. CalRecycle's HHW Annual Reporting found that collection of hazardous waste increased from 19,842,879 lb in fiscal year (FY) 93-94 to 93,023,602 lb in FY 12-13.

In the U.S.EPA Tribal Guide for Handling Household Hazardous Waste, HHW is defined as, "Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients." Due to these potential contamination threats present in the waste

paint stream, specialized collection and disposal are undertaken to protect water quality, as well as human and environmental health. The PSI initial dialogue document notes that much progress had been made in mitigating the hazardous components within paint "Compared with 20 years ago, the majority of today's architectural coatings have few VOCs, little lead, and no mercury."(Greiner et al. 2004, 5) This transformation is the result of countless laws working in conjunction to reduce the negative externalities associated with the production and resulting physical properties of paint. Dobson (1994) captured the paint industry's weariness regarding legislative mandates to reduce unfavorable characteristics of paint. An industry representative commented on legislation aimed to reduce volatile organic compounds (VOC) in paint, "As gains get more expensive as you go on, is there a point where enough has been done for most practical purposes? The greenest possible paint may well cost more than anyone can afford." (Dobson 1994, 2) Reductions in paint toxicity, ignitability, corrosivity, and reactivity have lessened the waste streams threats to public health and safety; however the waste stream is still categorized as household hazardous waste and must be managed accordingly. The CalRecycle HHW website states that within California "…in 2009 paint represented almost one-third of the material collected through local HHW programs and cost local government millions of dollars to manage."

Beyond the threats to environmental health and safety, paint production and disposal can also be viewed through a lens of sustainability and resource management. Governments, non-government organizations (NGO) and subsequently the paint industry are increasing calls to decrease the life cycle impacts of their consumer product.

Processes undertaken to extract and process virgin raw materials is far greater than the environmental impacts incurred from the actual manufacturing and transporting of paint to the point of sale (Hakkinen et al. 1999). These findings highlight that the use of recycled paint could reduce the need for virgin materials and subsequently reduce environmental impacts associated with paint manufacturing. California is increasing efforts to reduce waste, moving toward a more circular material flow within the paint industry and overall economy.

Sample Frame for Content Analysis

Content analysis of documents detailing the Product Stewardship Institute's (PSI) engagement with the paint industry was undertaken at three main points within progression of CPSL toward implementation. First, "A Background Report for the National Dialogue on Paint Product Stewardship" was analyzed as it explored the origins of why paint was targeted for an EPR-based solution. Secondly, the "Product Stewardship Action Plan for Leftover Paint" enabled insight into the contentious issues and possible solutions. Lastly "The Dynamics of Dialogue: Lessons Learned from the U.S. Product Stewardship Movement" detailing the take-away lessons learned throughout the dialogue process; the first and second signed paint MOUs were also reviewed. Additionally, public comment documents were analyzed to identify the points of contention encountered when California moved to implement regulations to guide CPSL as it became a functioning program. These documents represent stakeholder viewpoints on specific policy tools that were being contemplated for inclusion in final regulations. Lastly, a review of legislative language and CalRecycle webpages was undertaken to

understand the context and eventual fate of product categories that have entered into the California policy implementation process. The CalRecycle website was specifically used to obtain statutory language for targeted laws.

Sample Frame for Interviews

Interview subjects were stakeholders who possessed substantial knowledge or experience pertaining to waste management issues and legislation in California. Subjects who worked in a local gubernatorial jurisdiction capacity overseeing HHW management were asked to participate, as they possessed direct experience with the logistics and cost of managing a burdensome waste stream. Beyond these HHW specialists, local government personnel who oversaw waste management and recycling efforts on a larger, ideological scale, program managers and policy advocates, were targeted as they would provide an overarching perspective of local government views on waste management and EPR. Beyond public sector workers, individuals from the nonprofit sector were targeted for inclusion as they represent an additional perspective, interwoven but separate from that of local government. Non-profit actors within the EPR-realm are able to engage in activities government officials may not be able to, and possess varied experiences within the policy implementation process. These organizations will often focus their energy in a singular direction, to create a desired change; this ability to hyper-focus enables them to cultivate a wealth of experience and knowledge on a subject matter, i.e. EPR-based policy. Representatives from the manufacturing sector were targeted for inclusion in the sample; however, limited responses were received, with fewer commitments to participate. Targeted industry representatives included many of the lead individuals at

specific product PROs. These individuals were targeted because they represent an extension of the industrial sector, as well as a position of direct interaction with EPR ideals and mandated legal frameworks. A single PRO representative from the battery industry agreed to an interview.

Geographically, Northern California is an ideal study system for this research as the region contains some of the most environmentally progressive government jurisdictions and NGO advocates within the state. A majority of research participants are individuals located within the nine San Francisco Bay Area counties, as this geographic area is abundantly populated with real world experts on the researches topic. The PRO participant is not located within the Northern California region, but frequently deals with California efforts to engage and regulate their product category. California as a state represents an influential jurisdiction in which EPR legislation has successfully garnered political advocacy. On the contrary, the ability of policy streams to merge within other states or jurisdictions may not be as successful where public interest is low or industry wields more power.

Data Collection

Stakeholder Interviews

Qualitative, semi-structured interviews were undertaken with a variety of stakeholders possessing direct experience with HHW and waste management legislation. Each possessed a varied spectrum of EPR-based knowledge due to their specific job title and experience. This pool of potential interview participants included government employees at the local and state level, non-profit stakeholders, and industry

representatives. Thirty individuals were contacted regarding potential participation. Final interview counts from the three identified stakeholder groups include one industry representative from a PRO, seven individuals from local government jurisdictions and no representatives from the non-profit sector.

The interviews consisted of 23 generated questions, which took participants 30-60 minutes to complete. The interview questions were designed to collect data detailing how a participant's organization interacts with EPR-based issues, their understanding of EPR principles, perspectives/politics within the realm, opinions on certain product categories, and their vision of the future of EPR in California. The structure and content of the interview allowed for a consistent set of questions to be addressed across all interviews, while allowing each participant to add unique insight and stories to the established interview framework. The established interview questions allowed for personal views on EPR to emerge through the lens of their personal and professional opinions. Engagement with human subjects requires approval from the San Jose State University Institutional Review Board (IRB). This process ensures that engagement with research subjects meets all applicable SJSU and federal requirements to ensure ethical and responsible interactions between myself and the interview subjects. Emails were sent to potential participants detailing the research and what their participation would entail (Appendix B). In follow-up, correspondence with interested participants was then undertaken to clarify my research intentions intentions and expectations, establish an interview time and place, and disseminate a consent form (Appendix C).

All semi-structured interviews occurred from June, 2016 to September, 2016, at a

location chosen by the interviewee. Interviews were recorded with a secure, personal iPhone, using RecordPro software, as well as, a personal computer using Microsoft Media Recorder. Both recorded audio files were then uploaded to the researcher's personal computer and personal email google drive i.e. cloud storage. All audio files were transcribed by the researcher through utilization of Google voice typing and subsequent editing for accuracy. Interview lengths lasted in duration from 30-60 minutes. In addition to the audio recording, brief field notes were collected to catalog any unique comments or insights that emerged from the subject's open-ended responses (Babbie 1995).

Content Analysis of Waste Paint Implementation Process Documents

Content analysis is a methodology that allows for in-depth interpretation of verbal, written, or visual communication signs (Cole 1988). As a qualitative research method, content analysis allows the researcher to create valid inferences from the data to their specific context, ultimately yielding a robust interpretation of facts, new insights and an applicable guide to action (Krippendorff 1988). In the preliminary background research on the CPSL, and processes surrounding its implementation, a variety of insightful documents were identified at various points throughout the policy implementation process. Documents identified during the initial agenda setting phase or MOU dialogue process included materials produced by PSI in preparation of the national paint dialogue, as well as, documents reflecting on the collaborative dialogue process. Within the California implementation process, rulemaking public comment documents were reviewed for all four public comment periods. Lastly, CalRecycle web pages were utilized to obtain direct statutory language to determine intent of the law. Content

analysis of all targeted documents aimed to expose the predominate concepts brought about during all phases of the policy implementation processes.

Data Analysis

Interview Transcripts

A qualitative methods approach was utilized to interpret targeted documents and interview transcripts. These data sets provided an understanding of stakeholder interactions and issues encountered within California's waste management policy sector. I then looked to immerse myself within the data pool, ultimately looking to organize and make sense of the disparate streams of data. Dey (1993) outlines specific questions that should be asked when reading through the data, including:

Who is telling?

Where is this happening?

When did it happen?

What is happening?

Why?

Data was processed numerous times to immerse the researcher within the pool of data to a point of saturation, ensuring that all possible insight and theories can be identified (Burnard 1991). All transcribed interviews were read three times, with interviews being processed extensively due to the researcher personally undertaking the transcription process. Once data had been read through multiple times, I organized and analyzed the qualitative data through the use of qualitative analysis software Dedoose, a process which included open coding, category creation, and abstraction.

The first step of analysis, opening coding, consisted of notes and headings being assigned throughout the interview transcript. Words, sentences, and ideas were highlighted during these initial, detailed readings. These data points were coded and given a brief description or word signifier, producing a large pool of codes. In conducting the research I attempted to bring no preconceived concepts, interpretations or conclusions into the coding process. These initial data points were consolidated onto a coding sheet and parsed into cohesive groups to allow for broader categories and themes to emerge. The process of generating broader themes through synthesis of the initial open coding process allows further consolidation and definition of these categories (Burnard 1991). The goal is to develop themes that can be assigned to the research questions. Similar headings and general codes identified during the initial coding round were combined to produce broader themes, with consolidation of themes producing the following themes: politics within the legislative process, criteria to pursue EPR, role of local government, perceived industry perspective, common discourse amongst involved stakeholders, policy tools, elements of sustainability, and program funding. After these themes were generated and focused, the data was revisited within the context of these new themes, to extract specific excerpts that fit into these themes.

In the next level of coding, the categories were further sub-categorized to allow for more focused groups to be generated, crystallizing larger concepts. Relevant codes, headings and words were sub-categorized within the larger identified themes, and include the following combinations: policy tools was absorbed into the grandeur theme of sustainability, as debates over legislative language often conflicted over movement

toward more progressive requirements. EPR champion was sub-categorized into collaborative processes, as policy and process leaders inherently adopted collaborative processes to facilitate movement forward within the process. Role of local government was sub-categorized into criteria to pursue EPR, as implementation in California often initiates with movement at the local municipality level.

Lastly, abstraction of the coded data involved formation of general overarching themes constructed from the various cohesive categories previously generated (Polit and Beck 2004). The refined categories were further analyzed to identify significant themes relating back to the research purpose and questions. This abstraction process continued until no further synthesis of the data can occur. The collection of interrelated data, when applied and analyzed within the five stream confluence policy streams model, provided insight and contextual enlightenment relevant to the research questions. These final broad themes of influence include the following: financial and environmental sustainability, impetus to act, EPR champion and collaborative processes.

Waste Paint Implementation Process Documents

Analysis of CPSL implementation documents aimed to construct a web of factors, categories and information, ultimately producing a framework of interrelated phenomena (Kyungas and Elo 2007). All documents were analyzed through inductive content analysis, due to a fragmented collection of literature on EPR-based policy implementation. Through content analysis, words can be distilled into fewer more focused categories and by undertaking this process it is assumed that similar words, phrases, categories share a similar meaning (Cavanagh 1997). Within my research

process selected documents were initially read through, highlighting portions that appeared to be influential in either facilitating or hindering progress through the implementation process. The researcher was sure to make insightful notes to accompany the selected words and passages. After open coding, lists of words and categories are grouped into higher order headings (McCain 1988). This consolidation process aims "...to provide a means of describing the phenomenon, to increase understanding and to generate knowledge." (Cavanagh 1997, 3) The final process undertaken was abstraction; labels and categories identified throughout the coding process were utilized to formulate broad overarching themes present in the documents within the context of the research questions (Burnard 1996). The abstraction process continued until the researcher felt that there were limited opportunities to further consolidate and crystalize relevant categories.

Findings

Research Question 1

Findings for this section were generated through content analysis of PSI dialogue process documents, "A Background Report for the National Dialogue on Paint Product Stewardship" and "Product Stewardship Action Plan for Leftover Paint," as well as the first and second signed waste paint MOU. Analysis of interview transcripts provided further insight into the factors that enabled CPSL to successfully proceed through the agenda setting and policy implementation process. Review and coding of all documents and interview transcripts yielded a large variety of notes and headings. Further processing and consolidation of codes produced a more focused set of themes through multiple rounds of synthesis. These categories were further synthesized and consolidated to identify the broad overarching themes present in the documents and interview transcripts. These broad overarching themes were distilled down to the following: collaborative processes, policy instruments, and sustainability. These broad themes and related code words and are organized in table 2 below.

Table 2. CA EPR Product Category Broad Themes and Relevant Codes

Broad Themes	Relevant Codes
Collaborative Processes	- Process Champion - Politics - Industry Resistance - Concessions - Non-Profit Perspective - Definition of Problem - Industry Engagement - Government Perspective
Policy Instruments	- Legislative Language - Recycling Markets - Costs to Administer - Funding Source - Stewardship Plan Consistency
Sustainability	- Legislative Language - Household Hazardous Waste (HHW) - Program Convenience - Waste Management Hierarchy - Government Perspective

Viewing the overarching themes within the context of the CPSL implementation process illuminated two main factors which most strongly enabled CPSL to complete the CA policy implementation process. These factors include a substantial collaborative preliminary dialogue process and growing consensus on the need for an end-of-life management policy solution. While there must first be a perceived "need" to enter into a dialogue, the willingness of involved stakeholders to move into a coordinated dialogue process, eventually producing the signed MOU, is arguably the most crucial factor in enabling paint to complete the policy implementation process in California.

Collaborative Processes

PSI produced two preliminary reports titled "Paint Product Stewardship: A Background Report for the National Dialogue on Paint Product Stewardship" and

"Product Stewardship Action Plan for Leftover Paint." These documents provided background research and stakeholder perspectives to inform the forthcoming dialogue on waste paint management. It was anticipated that government and industry stakeholders would diverge in their assessment of the "problem," so clear, informative metrics were necessary to facilitate the dialogue process. The Action Plan Report, "...includes a problem statement, proposed project goals, dialogue process, and other information that had been discussed extensively with the 37 people PSI interviewed to gain a greater understanding of paint management issues and potential solutions." After synthesizing participant responses, PSI identified three predominant interpretations of the "problem" in the background report, as follows:

> **1. Opportunity View.** "Leftover paint contains valuable resources. The private and public sectors have the opportunity to build markets for these materials, create jobs, and reduce unnecessary paint disposal and its accompanying environmental impacts. Leftover paint potentially represents an inexpensive source of raw materials for paint manufacturers."
>
> **2. Problem View**. "Leftover paint costs state and local governments millions of dollars annually to manage. Both latex and oil-based paints pose environmental threats when disposed of improperly. Collection and proper management of these products is important for environmental protection."
>
> **3. No-Problem View**. "Latex paint is innocuous and there are few environmental risks associated with it. It is the consumer's responsibility to use up or dry up leftover latex paint prior to disposal. Yes, oil-based paint is hazardous and it is up to consumers and government agencies to ensure it is properly disposed of."

This preliminary document put a great deal of emphasis on creating definitions to be utilized through the rest of the MOU dialogue process. These collaborative processes during early MOU dialogue talks created an atmosphere of inclusion and responsibility which were carried forward though the process. These initial interpretations of the

problem would need to be reconciled to a point of collective cohesion to move the process forward, a point at which each stakeholder felt that their concerns were addressed and that certain concessions were appropriate. PSI states that the first MOU "is the result of four meetings and numerous workgroup conference calls over the past year (December 2003 – September 2004), and was made possible through the cooperation of the stakeholders, and by their shared priorities." (Paint Product Stewardship Initiative MOU 2004, 2) PSI encapsulates the overarching purpose of the MOU in the following statement:

> The overriding goal of the PPSI is to ensure that leftover paint and empty containers will be managed in a manner that is protective of human health and the environment. The primary goal of the dialogue is to develop an agreement that will result in reduced paint waste; the efficient collection, reuse, and recycling of leftover paint; increased markets for products made from leftover paint; and a sustainable financing system to cover any resulting end-of-life management costs for past and future products. Supporting objectives include decreasing the improper disposal of leftover paint; attaining the highest value possible for leftover paint; and improving container collection and recycling. (Paint Product Stewardship Initiative MOU 2004, 2)

The first MOU produced many parameters agreed upon by involved stakeholders; however, parties proceeded to enter into a second dialogue process to further define the details of what an EPR-based framework would entail. This commitment to continue talks demonstrates that stakeholders were embracing the collaborative atmosphere of the MOU dialogue and felt the need to continue talks to define parameters of a finalized program. In reflecting back on the MOU process PSI states the following:

> Numerous times throughout the dialogue process the agreement seemed as if it would fall apart. However, what kept the stakeholders working together was the potential cost savings for government, the ramifications of failure and the threat of unilateral patchwork legislation for ACA, and the promise of a national system for all parties. (Cassel 2001, 13)

The initial MOU created a work period of two years, after which findings would be consolidated via the project profiles, along with input from a steering committee. Moving forward through the dialogue process, the second MOU established a more informed and focused program framework, with the ultimate goal of implementing a pilot program crafted from the points of consensus reached up until this point. The agreements of the 2nd MOU are as follows:

> The undersigned parties have reached agreement on this voluntary Memorandum of Understanding ("MOU") in order to address the challenge of reducing and managing unwanted leftover paint. This MOU supports the continuation of the Paint Product Stewardship Initiative (PPSI), first established in 2003, for another three years in order to develop a new nationally-coordinated system for the management of leftover architectural paint. As part of this MOU, a state-wide "Demonstration Project" is to be undertaken in the State of Minnesota to work through critical issues and gather information that will be needed to develop a functional, fully funded, environmentally sound, and cost-effective nationally coordinated leftover paint management system. At the end of the Minnesota Demonstration Project, the nationally-coordinated system is to be implemented in the rest of the United States according to a phased implementation schedule. (Paint Product Stewardship Initiative 2nd MOU 2007, 1)

The MOU dialogue process facilitated the crafting of a somewhat mutually agreeable definition of the waste paint management "problem" and began to outline a subsequent "solution." However, even after the prolonged MOU dialogue process, no concrete, prescriptive, legislative solution was agreed upon. A "voluntary" approach would be continued, eventually moving toward legislative mechanisms, if found to be necessary. Agendas and interpretations of the "problem" would undoubtedly still differ based on the particular stakeholder group, and while not all solutions to the problems were crystallized during the MOU process, it helped to formulate a foundational legislative framework. Many agreed upon program details were able to emerge even though local government

waste manager interviewees expressed frustration in engaging with product manufacturers within their own sphere of work. One Interviewee commented on the paint industry, "...Industry becomes the, the elephant in the room. I mean they can control a lot of levers and as long as industry is opposed to, whether it's statewide or nationwide EPR movements, they will always have first crack at denying those types of legislation." (County HHW Facility Manager 2016) However, another interviewee stated that the paint industry "...engaged the stakeholders. They still didn't have a requirement of an advisory committee either, but they were more willing to engage stakeholders and work things out, make sure the program was going to be a success." (County HHW Program Manager #2 2016)

The dialogue process decreased industry resistance to policy implementation. This was due to industries ability to impart significant influence upon content of any forthcoming legislative framework for waste paint. The paint industry foresaw that refusal to engage would prove fruitless as local jurisdictions, states, cities, and counties, were ready to act on waste paint outside the constructs of the established dialogue process. Evident by the collaborative process undertaken when dealing with the waste paint management issue, industry has begun to shift their stance on these EPR-based initiatives. One interviewee commented, "....we're starting to see splintering of the industries where you've got manufacturers who've been going along with the party line and are now splintering off saying I don't want to be part of this." (County HHW Program Manager #2 2016) While the paint MOU dialogue process progressed at a leisurely pace, taking 5 years before any program would be operational the long process

did lend itself to a more structured and fluid implementation process when the program was introduced to the California policy process. The typical process of legislators introducing bills at the state level often requires entrance into a contested policy formation process. Interviewees expressed their opinion that EPR-based policy agendas often hinge on the ability of political will to reach a threshold needed to create action:

> You know it's all very political, all the EPR stuff. I mean who's got the most money and who's got the most persistence to overturn something or lobby senators or whatever to your point of view. Most of the manufacturers have loads of money. The pharmaceutical companies, I mean we haven't really taken the gas cylinder folks to task at the state level, but um you know the paint, mattresses, carpet all those guys they lobby hard. Plastic industry same thing they lobby hard and they've got lots of money. (County HHW Facility Manager, August 2016)

While this collaborative stakeholder process was pivotal in enabling enactment of the bill, the MOU process may not have been initiated if not for the overwhelming evidence that waste paint necessitated a legislative solution.

Influence of Volume in the Waste Stream

As waste management efforts evolved in California, efforts increased to capture and divert quantities and types of materials into the recycling stream. With passage of AB 939 in 1989, local jurisdictions were required to create infrastructure to divert certain categories of hazardous waste from the solid waste stream. A county HHW Facility Manager stated, "The county operates a household hazardous waste facility or the function or the roles because it's mandated by AB 939. It's mandated for the cities to have some type of a facility or operation but the county assumes that role of responsibility." (County HHW Facility Manager 2016) The HHW stream contains a variety of waste types, however paint was prioritized as it constituted a significant portion

of local government collection efforts and subsequent costs for disposal.

In 2004-05, according to California's HHW reporting system, local programs collected roughly 2.25 million gallons of waste paint. That number climbed to a pre-CPSL collection number of just under 3 million gallons and then steadily hovered around 2.5 million gallons per year until 2012-13, amidst the implementation of the CPSL. Paint collected through local jurisdictions and reported to the state is detailed in Figure 2.

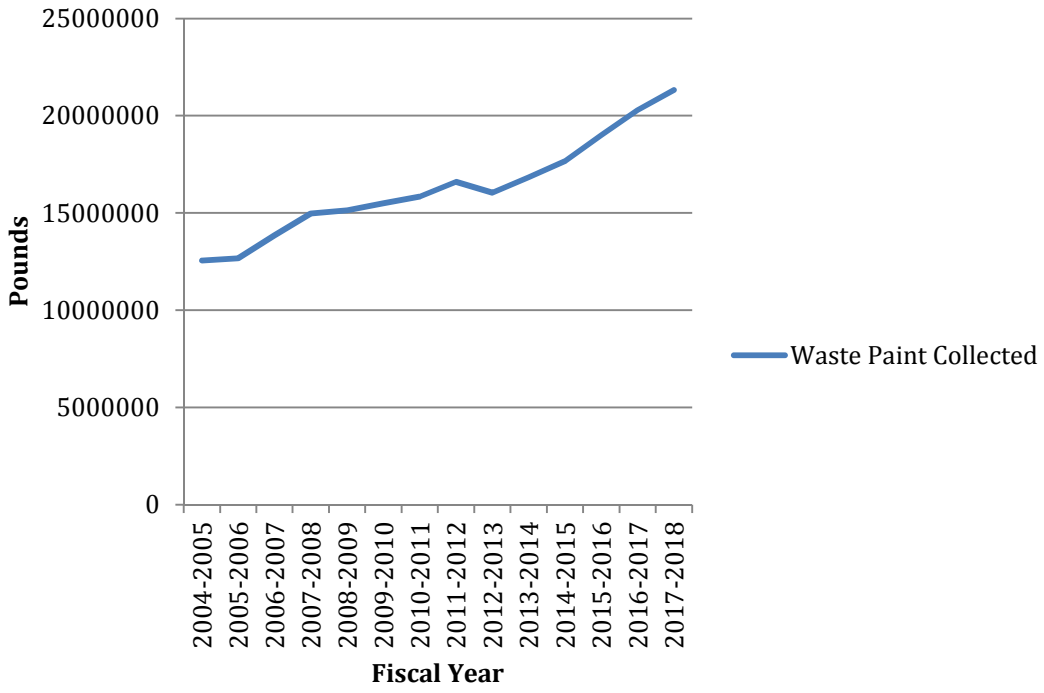

Figure 2. Waste Paint Collected by Local California Jurisdictions. Data obtained from CalRecycle, 2019.

A local government interviewee stated, "I think it was ultimately, it was so clearly the largest waste stream for local governments that the paint industry needed to do something." (County HHW Program Manager 2016) The impetus to engage

manufacturers in their products disposal efforts increased through the years as local government jurisdictions looked to implement more progressive and long-term waste management legislative solutions. One interviewee reflected on the broad goals and responsibilities of a large urban city government jurisdiction:

> Historically to deal with the end-of-life of many products the responsibilities fall to local government and because we have such a wide range of products...working towards going towards zero waste system, we cannot, we can no longer afford as a city to be burdened with all of those different products and the end of life management and so many products have life cycles that at the end of their useful life their toxic, very difficult to manage. (City Toxics Reduction Manager 2016)

The influx of mandated diversion of specific waste streams, and subsequent costs to do so, illuminates the logistical and financial catalysts for local governments to pursue EPR-based legislation. Numerous government stakeholder interviewees detailed cost savings the CPSL bestowed upon their local HHW program:

> Having the industry share in some of the cost would obviously be beneficial to us or taking some of that cost burden away, meaning taking some of that waste stream away alleviates that personal cost burden on us. Again so, I will go back to paint, by paint being diverted from our facility and redistributed at the paint stores within the county or the transfer stations within the county, that takes away our time to manage that specific waste stream. We're managing less of that that now, that gives us more of an opportunity to spend on the higher hazard or some of the more difficult stuff that there isn't any EPR program for or it's harder for a hardware store to manage. (County Environmental Health Program Supervisor 2016)

Another County official highlighted detailed financials in the statement below:

> Just off the bat $25,000 a year, that's what we were spending just on the paint portion, this is just disposal, nothing to do the time to manage it, handle it, all the associated costs, that was just the contract alone and the right of the top it was $25,000. It's probably closer to the $50,000 range that we've been able to save at minimum. Just by doing that it's certainly been helpful to have that program in place to take some of that cost burden away from us. (County Environmental Health Program Supervisor 2016)

Cost was consistently identified by interviewees as a motive to pursue an EPR-based framework for paint and was one of the last items to be addressed within the MOU dialogue process. Financial sustainability was crucial in creating a program that industry was willing to accept, needing to balance program longevity and solvency, with fair allocation of funds. Local jurisdictions move toward implementation of EPR frameworks for a variety of reasons; however, cost is often identified as a primary motive by researchers in the field:

> This promise is particularly appealing to municipalities, which in the United States typically shoulder the burden of paying for waste management, including household electronics, batteries, and paints, all of which require special and frequently costly handling. While local government interest in EPR is not new...increasing fiscal pressures at the municipal level in recent years has heightened that interest, given the potential for savings in EPR programs. (Nash et al. 2015, 5)

Other motives such as design change and long term sustainability concerns are undoubtedly factors, however the most easily justifiable and concrete measure of success is relief of financial and logistical burdens on local government.

Beyond the implementation momentum generated from paint being a high volume hazardous waste which constituted a significant portion of local HHW program throughput, an EPR-based framework for waste paint was also desired to shift the state toward more progressive, sustainable waste management practices. Due to EPR being a contentious and somewhat obscure policy framework, divergence in opinions and understandings exist. A county HHW official highlighted how the EPR trend needs to gather momentum over time to create transformative change in line with its core tenets:

> It’s changing, that it's a big shift, it's a big shift for a lot of politicians or elected

> officials cause they look at it, their responsibility to protect people, protect the environment and some, there are times that they feel that they're relinquishing some of this if they are requiring producers to be responsible for this….they want to feel that they're taking on that responsibility not understanding that there's a bigger picture to this, aside from the cost again, there is the Greener design, better infrastructure to make this happen to make management of this much easier. (County Environmental Health Program Supervisor 2016)

The initial impetus to implement an EPR-based framework for waste paint was steeped in achieving relief from financial and logistical burdens created by a material outside of local government's sphere of influence. As the framework moved through the policy implementation process, specific stakeholders advocated for the policy framework to include policy tools creating change toward core EPR principles, predominantly broad sustainability ideals, i.e. design for the environment. This commitment to producing a thoughtful and progressive law demonstrates the sustainability ethos that certain stakeholders were bringing into the policy implementation process. While industry had the MOU dialogue framework to adhere to, California stakeholders were steadfast in their insistence that a paint stewardship law in California would include certain markers of sustainability in line with California's progressive environmental agenda. Commitment to implementing a comprehensive and idealistic EPR-based policy framework for waste paint helped to push the legislative boundaries established by the MOU process. While CPSL ultimately managed to successfully complete all stages of the policy implementation process, serious challenges arose during the preliminary agenda setting phase, MOU process, and the California rulemaking process.

Research Question 2

The results of this section were produced through content analysis of PSI MOU

drafting document "The Dynamics of Dialogue: Lessons Learned from the U.S. Product Stewardship Movement" and 45 pages of rulemaking public comment documents. These sources were analyzed to identify the specific issues which created points of dissent amongst involved stakeholder groups. Additionally, coding strategies applied to interview transcripts were utilized to determine where divergences in EPR interpretations exist and which factors can hinder EPR-based policy implementation. Thorough coding processes of both targeted documents and interview transcripts identified the following prominent themes of contention: Industry perspective/interpretation, financing, specific policy instruments, and detailed reporting requirements. Analysis found that while points of contention were encountered at all phases of the policy implementation process, the majority came about during the agenda setting and decision-making phases of the policy implementation process. Points of stagnation encountered during the agenda setting phase jeopardized the implementation process gravely.

The MOU dialogue process was bound to encounter points of contention as the dialogue was established to facilitate identification of divergence points in stakeholder perspectives. One of the first issues to be addressed when entering into the dialogue process would be the exact products covered under the program:

> All stakeholders agreed that oil-based paint should not be disposed of in landfills and incinerators but should instead be collected for proper management. However, they differed on latex paint, which represents about 80 percent of all paint sold. The paint industry argued that latex paint is non-hazardous and perhaps should not be collected at all. Government officials countered that latex paint has resource value no different from what is collected in curbside bins, and that their residents would be confused by a disposal message. (Cassel 2011, 11)

This early objection by industry representatives foreshadowed the forthcoming

contentious negotiation process. This initial divergence in program expectations, set the tone for the forthcoming negotiation process, as each detail of a potential program would be scrutinized and debated. Program funding was an additional point of stakeholder dialogue divergence within the MOU dialogue process:

> A key element in the agreement has since become known as an ―eco fee, which legislatively establishes an―assessment‖ to be paid by consumers on each can of paint. During negotiations, some government stakeholders argued for full cost internalization. However, ACA made it clear that any agreement would need to contain the assessment, and that full cost internalization would result in unequal competition among its members. (Cassel 2011, 12)

After finalization of the second MOU and implementation of a pilot project planned for Minnesota, dialogue participants were still unsure as to how the program would be funded. Determining how the waste paint model would be funded was one of the last issues settled by stakeholders during the MOU dialogue process. As new specifics within the dialogue process emerged, each presented a new hurdle that could result in stagnation or dissolution of the dialogue process. Despite threats to the cohesive dialogue process, stakeholders were motivated to maintain relations due to fear of action without input. Each stakeholder looked to adhere to their interpretation of the appropriate solution, with threats to exit the dialogue process wielded as a play for power and fear. The entire MOU process was contentious, as it formed the foundation for much of the end-of-life legislative framework for paint across the country. The various stakeholders held to their ideals creating tension at confluence points within the dialogue process:

> Numerous times throughout the dialogue process the agreement seemed as if it would fall apart. However, what kept the stakeholders working together was the potential cost savings for government, the ramifications of failure and the threat of unilateral patchwork legislation for ACA, and the promise of a national system for all parties. (Cassel 2011, 13)

Regardless of the narrative prescribed too, industry stakeholders were bound to engage during the MOU process as, "During the PSI dialogue process, California, Minnesota, and other states expressed their intent to legislate if an agreement was not reached." (Cassel 2011, 15) This statement shows clear government intent regardless of industry stance, and strengthens ties to the negotiating table. Furthermore, PSI expresses their opinion that:

> Legislation gets industry's attention. It shows clear government intent and, when resolved, will provide certainty for industry, which has an intrinsic value since they can plan for it. Industry will rarely take voluntary action on product take-back for products without intrinsic value if they do not believe government will take action. (Cassel 2011, 15)

Up until this point in the stewardship program development process most of the content within the framework was brought together in a cooperative atmosphere, crafted over numerous years. As CalRecycle attempted to establish regulations to accompany the statute, new hurdles to implementation emerged as the policy dialogue shifted from a process confined within the constraints of the MOU dialogue, to a new phase, welcoming new influences within the state legislative rulemaking process. As the dialogue proceeded from the MOU process to the California implementation process, industry held tight to the parameters established during the MOU dialogue as they wanted the signed MOU document to be the final iteration of all future domestic waste paint EPR-based laws. California lawmakers had different ideas of what paint stewardship would look like in their state and thus attempted to adhere to their vision of what the law would achieve and how. The natural progression of legislative proceedings transitioned the process through the point of policy formation, the MOU process, enactment of the statue in California,

and lastly movement into the rulemaking process. The rulemaking process brought about public comment periods, enabling local government stakeholders to openly challenge predetermined metrics and strategies established by the signed MOU.

California Legislative Rulemaking Process

CalRecycle's decision to enter into a rulemaking process was opposed by industry stakeholders as they felt regulations were not necessary to carry out the intent of the statute. The American Coatings Association (ACA) stated during the initial 45 day comment period, "Simply put, the Proposed Regulations are far beyond the statutory authority granted CalRecycle by PRC §48700." (45-day comments, 22) Eleven paint organizations and manufacturers submitted comments agreeing with the ACA's general objection to regulations to accompany the statute:

> Benjamin Moore & Co. supports comments submitted by the American Coatings Association (ACA) and PaintCare. Benjamin Moore & Co. believes the proposed regulations are well beyond the scope of CalRecycle's statutory authority and do not comport with the plain language and legislative intent of the underlying legislation. (45-day public comment 2012, 24)

Additionally the California Paint Council stated:

> Proposed regulations inconsistent with national MOU for PaintCare and put California's paint recovery goals at risk. As stated, the MOU was the basis for AB 1343 as well as the PaintCare program already being implemented in Oregon and that will be implemented in Connecticut. Both of those states, unlike California, have decided that regulations were not needed because the statute clearly outlines the PaintCare program. The industry has worked hard to ensure consistency among all states implementing PaintCare, which is the only way PaintCare will be successful on such a large national scale. The Proposed Regulations would instead subject manufacturers operating in multiple PaintCare states to inconsistent and inappropriate requirements, putting California's own goals for a successful paint recovery program at risk. (45-day public comment 2012, 24-25)

This detailed challenge to CalRecycle regulatory authority was met with a pointed

response:

> Staff has reviewed the Oregon plan and annual reports, and has made efforts to harmonize that program where possible, except where the statute required differences specific to California, such as where California requires enforcement and the promulgation of regulations will assist in the implementation. CalRecycle has been an active participant in the Paint Product Stewardship Institute's Dialogue and MOU since its inception, but notes that the MOU expired on 11/1/2010, and that key elements of the MOU, such as a pilot program in Minnesota, are no longer viable. Additionally, CalRecycle opted to include a signing statement when it signed the last version of the MOU that stated that the signature did not preclude CalRecycle (then known as the California Integrated Waste Management Board) from taking alternative actions that were more appropriate for the state of California. (45-day public comment 2012, 24-25)

Additionally, "CalRecycle staff notes that the paint stewardship program in Oregon is a pilot program and pilot programs do not necessitate regulations due to their expected short sunset periods." (45-day public comment 2012, 24-25) The paint industry made sure to "emphasize that to ensure that California residents receive a paint stewardship program in a "timely fashion" revisions based on ACA comments should be adopted to eliminate "superfluous, burdensome and costly additional requirements…" (45-day public comment 2012, 3) CalRecycle responded to these repeated claims on the foundational merit of regulations, by stating that:

> CalRecycle has been given authority by the legislature to make regulations whenever there is substantial evidence that regulations are needed to implement, interpret, make specific, or to govern CalRecycle's procedure when there is ambiguity regarding any requirement under the program, to effectuate the purpose of the statute. (15-day public comment 2012, 1)

CalRecycle expresses a strong desire to ensure the state operates an effective program, asserting its power to regulate and will do so to ensure the state receives an effective program. Within the larger scope of the rulemaking process, three main issues of contention emerged from stakeholder comments, obstacles to service provider

participation, “sustainable” practices and reporting/goal requirements.

Obstacles to Service Provider Participation

After CalRecycle released the proposed paint stewardship regulations concern was raised by local government and nonprofit stakeholders due to perceived restrictions on recruitment and compensation of paint collection service providers. These groups commented that the language within the statute and subsequent regulations failed to mandate that industry cover operational costs of already established collection services, predominantly local jurisdiction HHW programs. In response to this perceived resistance, Los Angeles County authorities proposed to define “operational costs” as, “costs to administer the program, such as those associated with administering the collection of architectural paint through the local household hazardous waste collection programs.” (45-day public comment 2012, 2) Furthermore, many local government jurisdictions illuminated PaintCare’s repeated desire to limit financial compensation for local government operations. San Luis Obispo County Integrated Waste Management Authority stated:

> PaintCare has stated on several occasions that they will not reimburse HHW programs for their cost to collect paint from the public...The stewardship plan should include the cost to collect paint from the public and the assessment should be sufficient to include the operational costs. (45-day public comment 2012, 4)

CalRecycle responded to these local jurisdiction concerns by stating:

> It is the responsibility of the service provider to negotiate a contract with a manufacturer or stewardship organization that adequately covers its own costs. CalRecycle cannot get involved in contractual agreements between manufacturers/stewardship organizations and service providers, and therefore no change has been made to the regulation in response to this comment. (45-day public comment 2012, 1)

Based on CalRecycle's response it appears that this issue of local government coordination and reimbursement for existing costs, had been largely predetermined during the MOU dialogue process. Within the California statute, language was included stipulating that all collection service providers enter into a "mutually agreeable and reasonably feasible agreement." This language had most local government entities unsure as to whether the implemented law and program would significantly reduce their financial burden through HHW program cost relief, as well as increased diversion of paint to newly established retail collection sites. The Solid Waste Association of North America, California Chapters, stated, "The proposed regulations contain only minimal requirements for manufacturers and/or stewardship organizations to work collaboratively with existing local government collection programs." (45-day public comment 2012, 12)

While the establishment of retail collection points would undoubtedly reduce the influx of paint into local HHW programs, these local government services would continue to collect paint because they represented a significant portion of the planned collection infrastructure contained within Paintcare's stewardship plan. Beyond concern over HHW program cost reimbursement, local governments and non-profits also expressed concern over whether Paintcare would faithfully and aggressively recruit retail collection sites. Retailer recruitment is detailed in phase 2 of the stewardship plan recruitment process, while existing infrastructure is the focus of phase 1. This apparent prioritization of implementation, along with repeated use of the word "reasonable" in defining any agreement with retail collection locations, prompted local government and nonprofit stakeholders to question about whether PaintCare would enter into the

recruitment process with intentions to recruit a high volume of retail collection participants.

The American Coatings Association (ACA) requested that the regulatory text should be modified to state, “The plan shall address the coordination of the architectural paint stewardship program with retail collection locations, who may participate on a voluntary basis, as much as this is reasonable feasible and is mutually agreeable between the parties.” (45-day public comment 2012, 8) Again, the use of the terminology “reasonably feasible and is mutually agreeable between the parties” is employed to establish agreements between PaintCare and service providers. ACA furthermore stated for clarification that “Individual service provider agreements will not address “all operational costs” as each agreement will be for different services as each service provider is capable of providing (i.e. a contract with a transporter would not address recycling or marketing costs).” (45-day public comment 2012, 11) The language which allows industry to only enter into service provider agreements when found to be “reasonably feasible and mutually agreeable” is again language solidified during the MOU dialogue.

During the second 15-day public comment period, Los Angeles jurisdictions (2012, 4) expressed concern that the regulations as written “do not ensure the development of convenient collection sites for residents. The Regulations need to be revised to include a plan to encourage manufacturers or the product stewardship organization to focus on recruiting retail participation to increase program convenience and effectiveness.” Within the third 15-day comment period, San Luis Obispo (2012, 3) urged CalRecycle to remove the language under which Paintcare and service providers can enter into agreements,

stating “The addition of the phrase “reasonably feasible and mutually agreeable” is fundamentally inconsistent with §48703(f) of statute which reads:“(f) Any retailer may participate, on a voluntary basis, as a paint collection point pursuant to the paint stewardship program.”

Calls to uphold principles of sustainability

Concerns regarding cost alleviation and collection site establishment ranked high on the list of government stakeholder priorities. These stakeholders also expressed a desire to create change in line with the EPR principle of design for the environment (DfE). One of the inherent goals of EPR programs is to force industry to redesign their products to create less waste and transform industry into a catalyst for resource efficiency and ease of recycling. The statutory language aiming to address issues of sustainability, environmental externalities and potential DfE, was not satisfactory for some local jurisdictions.

San Joaquin County Public Works commented that “PRC section 48700 (AB 1343) states the purpose of this program, in part, to “require paint manufacturers to…reduce the costs and environmental impacts… “– Efforts to reduce environmental impacts need to be described in the Stewardship Plan and Annual reports, as this is a key component of the product stewardship program.” (45-day public comment 2012, 7) Specific issues within the proposed regulations which promote action in-line with sustainable ideals and were highlighted as issues of concern by public comment participants include, the inclusion of paint containers in the stewardship law, market development efforts for recycled paint/reuse efforts, and program adherence to the California’s solid waste

management hierarchy. One of the early concerns raised by California jurisdictional stakeholders was whether paint containers constituted enough of a concern to be covered under the program. San Luis Obispo commented that "Paint containers are included in the description off " all applicable architectural paint products" and should be covered in the Stewardship Plan." (45-day public comment 2012, 6) As mentioned in the regulatory language, the implemented program should "reduce environmental impacts of disposal/reduce the costs and environmental impacts." ACA's stance was "AB 1343 did not include language specifying that stewardship organizations and manufacturers needed to include paint container management in their stewardship plans,…" (45-day public comment 2012, 4) This point of contention again goes back to the primary concern that CalRecycle is overstepping their regulatory power by proposing regulations which are inadmissible, per the agreed upon MOU framework and subsequent statutory language. CalRecycle repeatedly states that certain items that ACA raises for concern, are included in the current Oregon plan and subsequent annual reports, and should therefore be present in the California program to ensure consistency. Additionally, CalRecycle states, "the statute is clear on this issue that the funding mechanism is to provide a stewardship assessment on each container, not just the paint in the container. Manufacturers cannot sell paint without the container so it is logical that they cannot take back paint without taking back the containers as well." (45-day public comment 2012, 18)

There are two additional prominent issues raised during the initial 45-day comment period which can be categorized within the overarching theme of sustainability. First, stakeholders within the local government and the nonprofit sector highlighted their desire

for the CPSL to adhere to the California waste management hierarchy illustrated in Figure 3.

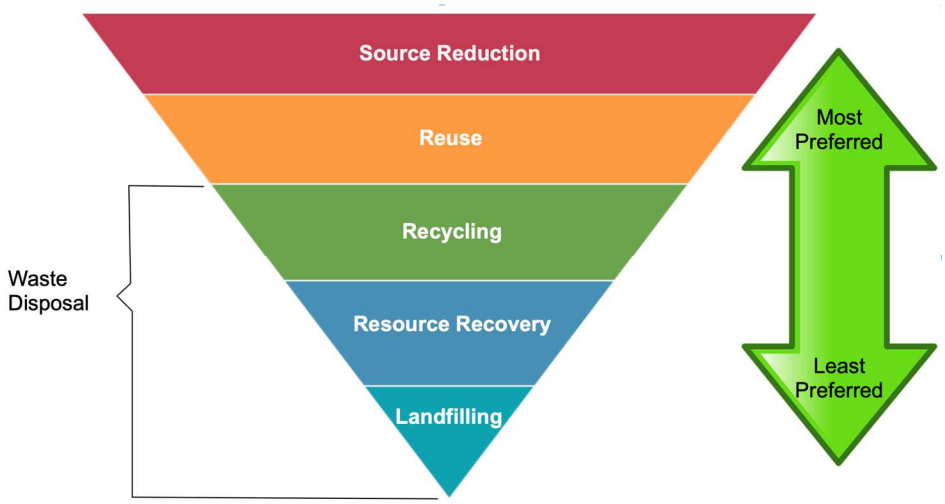

Figure 3. Solid Waste Management Hierarchy. Adapted from Shaikh, 2017.

San Joaquin Public Works asked ACA to, "Describe proposed measures that will provide for the management of architectural paint (products) in a manner consistent with the order of preference in the state's solid waste management hierarchy…and describe strategies to move materials up the waste management hierarchy." (45-day comments, 7) Under the current law, industry is able to utilize dried paint as alternative daily cover (ADC) on landfills and undertake energy recovery processes, burning latex and oil-based paints as a fuel source. In PaintCare's annual 2017-18 report, 13% of collected latex paint and 48% of oil-based paint was utilized for energy recovery. Both processes are characterized as acceptable "recycling" and/or "diversion tactics" by CalRecycle, yet do not align with California's broader vision of sustainable resource management. In rebuttal of these allowances, Californian's Against Waste stated that:

> According to Public Resources Code (PRC) 40180, "Recycle" or "recycling"

> means the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. "Recycling" does not include transformation. (15-day public comment 2012, 5)

CalRecycle's waste management hierarchy was established by AB 939 and has been guiding state waste management efforts since its implementation in 1989. The policy implementation process of waste paint legislation did not lend itself to robust reinforcement of the waste management hierarchy even though the hierarchy is statutorily mandated. This made any attempts to align paint stewardship in California with CalRecycle's EPR Framework Directive even less likely, as the framework is not legally binding.

EPR Framework Directive

In 2008 CalRecycle looked to implement an EPR Framework Directive which would "…guide proposals to seek statutory changes that would provide the Board with the authority to develop and carry out state government roles and responsibilities." (CIWMB Board Meeting 2008, Meetings Document Archive) The framework would establish standards for product stewardship laws and pave a path toward increased utilization of product stewardship in the waste management sector. The Los Angeles County jurisdictions commented that "Consistent with the EPR Framework, CalRecycle should collaborate with internal and external agencies, along with other key stakeholders to effectively address cross-media and cross-organizational issues when considering approval of product stewardship plans." (45-day public comment 2012, 27) Furthermore, SWANA stated, "Where allowed by statute the proposed Architectural Paint Stewardship

Program regulations should be revised and expanded to be consistent with CalRecycle's EPR Framework." (45-day public comment 2012, 29) CalRecycle responded that any comment about aligning the paint stewardship law with the EPR framework document was not within their statutory power, "AB 1343 does not grant CalRecycle the statutory authority to align the proposed regulation with all elements of the department's EPR Framework document." (45-day public comment 2012, 29) Again, the language of the enacted statute is a barrier for stakeholders who wish to institute policy instruments which would enable the law to align more consistently with progressive waste management efforts in the state.

Battle over Reporting Requirements

As part of the statutory language, manufacturers or the designated stewardship organization, is required to produce a stewardship plan prior to implementation of the program and must produce an annual report thereafter outlining operations. ACA's review of the proposed CPSL regulations revealed numerous concerns over required content within the stewardship plan and subsequent annual reports, "The following sections specified as required in the annual report are beyond the scope of AB1343 and should be removed: Executive Summary; Scope; Program Outline; Description of Goals and Activities based on the Stewardship Plan; and Market Development." (45-day public comment 2012, 4) CalRecycle responded by stating "PR §48705 (a) requires manufacturers to submit a report "describing its architectural paint recovery efforts," and specifies only the minimum of what an annual report shall include." (45-day public comment 2012, 4) Throughout the comment period ACA concedes that these reporting

requirements may be submitted in the final regulations, but must be voluntary rather than mandatory. Voluntary requirements as opposed to mandatory, is a common compromise within the statutory language and proposed regulations. A more detailed look reveals that inclusion of goals was mandated within the statute, yet industry was able to voluntarily set these goals based on an internal standard, as stated in section 48703 of the statute:

> (d) The plan shall include goals established by the manufacturer or stewardship organization to reduce the generation of postconsumer paint, to promote the reuse of postconsumer paint, and for the proper end-of-life management of postconsumer paint, including recovery and recycling of postconsumer paint, as practical, based on current household hazardous waste program information. The goals may be revised by the manufacturer or stewardship organization based on the information collected for the annual report. (45-day public comment 2012, 6)

ACA mentioned during the initial commenting period "ACA would like it to be clear that the manufacturer/stewardship organization sets the goals and is allowed to revise them, not CalRecycle." (45-day public comment 2012, 6) CalRecycle responded by stating, "CalRecycle knows, based on experience with other programs, that a thorough and transparent description of goals and how they are derived and measured contributes to a successful program. A goal without a baseline is meaningless and without context." (45-day public comment 2012, 6) CalRecycle does not have the ability to directly rebuke industries assertion that they hold the power to control this reporting requirement, rather they attempt to justify their inclusion as a necessity for success.

The California Paint Council went as far as to label the proposed regulations as "a broad EPR regulatory framework rather than the paint-specific program enacted in AB 1343" and "CPC cannot support what appears instead to be a broad format for extended producer responsibility regulatory policy by which products unrelated to paint are to be

measured at some later date." (45-day public comment 2012, 24) Rather than highlighting specifics of concern as ACA did, CPC appears to be attacking the core tenant of the EPR principle. CalRecycle's response to these CPC concerns revolve around their "efforts to harmonize that program where possible, except where the statute required differences specific to California, such as where California requires enforcement and the promulgation of regulations will assist in the implementation." (45-day public comment 2012, 24)

At the end of the public comment period many points of contention were unable to materialize movement toward government and non-profit expectations. This failure was due to these issues being to a large extent predetermined during the MOU dialogue. PaintCare proceeded to sue the state of California for regulations which required more stringent reporting requirements, as compared to statutory language and program requirements operating in other states. The 2nd Appellate District Court ruled that "CalRecycle had authority to adopt the regulations. Further, the regulations do not go beyond the Program because they do not dictate *how* manufacturers comply with the Program. Rather, they set forth what information manufacturers must provide to CalRecycle to comply with the Program. We affirm." (PaintCare et.al. v. Carroll Mortensen etc. et.al 2012, 4)

In closing, the issues of contention encountered during the California policy implementation process were significant obstacles to overcome. Throughout the process each stakeholder group held steadfast to their expectations and were not afraid to push back on opposing ideals. Implementation prevailed due to predetermined factors of the

MOU process, coupled with the ability of California to impart their own influence through the regulatory process. It appears that the main impetus to continue working through appraisal points was due to overwhelming momentum toward a legislative solution, sustained by fear of missing out on the opportunity to impart influence. This sentiment is accurately summarized by PSI's statement that:

> A key driver for government to enter discussions was the need to reduce waste management costs. Manufacturers were motivated by the prospect of a unified approach rather than piecemeal legislation. Retailers wanted voluntary collection options with no administrative costs to handle fees. These interests were met in the paint dialogue, creating a strong desire by dialogue participants to resolve ongoing program details. (Cassel 2011, 17)

Stakeholders were bound to the implementation process directly and indirectly, ultimately producing a legislative framework which was widely accepted amongst concerned stakeholders.

Research Question 3

This research question was answered by conducting thorough content analysis of documents produced throughout a variety of stages within the policy implementation process of four targeted product categories. Documents analyzed include the following: MOU dialogue process reports from non-profits, rulemaking processes, also known as public comment documents, relevant bill language via website review, and pertinent input from stakeholder interviews. In order to decipher the specific traits which make a product category more amenable to EPR-based legislation, all identified metrics were contrasted with similar markers encountered within the waste paint policy implementation process.

Review of CalRecycle's EPR: Policy and Law webpage identifies five laws which

"fit the basic definition of producer responsibility" including, mercury thermostats, pesticide containers, paint, carpet, and mattresses. The webpage also details "numerous California laws that apply to products such as electronic waste, motor oil, pharmaceuticals, sharps, and tires." The section goes on to clarify, "They are not considered EPR programs if they require large expenditures of public resources." Identified product categories were then analyzed according to a multitude of factors identified as precursors to a law, or prominent factors within an acting law, which impart their influence at various points within the policy implementation process. These are largely the factors identified within research questions 1 and 2, and include the following categories: degree of industry engagement, precedent of legislative efforts to implement a waste management solution, establishment of a PRO for the product category, and identification as high priority by waste managers. Based on the aforementioned criteria, products were selected for analysis as they represent product categories with a variety of abilities to navigate the policy implementation process; more specifically, the product categories represent a balanced mix of shared and juxtaposed traits, creating a robust mapping of influential factors. Selected product categories include, carpet, mercury thermostats, pharmaceuticals, and household batteries.

Review of relevant resources for the four identified product categories yielded a comprehensive list of factors which influence an EPR-based policy agenda as it moves toward implementation. Synthesis of these characteristics are plotted in Table 3.

Table 3: Influential Characteristics of EPR Policy Implementation in California

	Paint	Batteries	Carpet	Pharma	t-Stat
Preliminary Dialogue Process undertaken/MOU	-Dialogue process -Signed MOU	-Dialogue Process	-Dialogue process -Voluntary MOU	N/A	-Dialogue Process
Impetus to Take Action	- Volume -Cost -Toxicity	-Volume -Toxicity -Fire	-Volume -Sustainability	-Toxicity -Fire	-Toxicity
Policy Entrepreneur	Non-profit	Industry	State of California	Alameda County	State of California
Industry Non-profit	Yes	Yes	Yes	Yes	Yes

The factors which facilitated and hindered paints ability to complete the policy implementation process, identified in Research Question 1 & 2, are utilized to compare and contrast the experiences encountered by the identified product categories. Revisiting this data identified two main factors which can be most strongly correlated with enabling a specific product category to be more amenable to EPR-based policy implementation in California. Theses influences include, a perception of threat to public health and safety and industry willingness to engage with concerned stakeholders.

Impetus to Act

The first factor which influences a product categories ability to adopt an EPR-based framework is the products perceived threat to public health and safety. This "social concern," within a waste management context, can be understood as a multitude of factors often working in conjunction, ultimately reaching a threshold where concerned actors feel a policy solution is necessary to mitigate negative externalities. As identified in research question 1, paint was targeted for EPR-based legislation due to its high

volume in the HHW waste stream and subsequent financial and logistical burdens levied upon local government. The CPSL identifies factors as to why the law was necessary in Section 1, article A, "Architectural paint is a priority waste type based on its high volume, subsequent cost to manage, and high potential for increased recovery, reuse, and recycling." (California Architectural Paint Stewardship Law 2010)

During the initial paint dialogue process interviewees identified paint as a high priority item within their household hazardous waste programs. Interview participants repeatedly identified volume and subsequent costs as a significant burden on local government programs. In 2004-05, roughly five years prior to implementation of the CPSL, California HHW programs across the State reported collection of 22,947,027 lb Moving forward, in 2010-2011 26,296,359 lb were reported, with the following year, 2011-2012, yielding 27,671,517 lb Recently reported numbers in 2016-2017 had 24,974,332 lb. being collected, and demonstrates a slight reduction in the volume of paint being collected by local HHW programs. The paint industry produces a product which has widespread usage and is banned from landfill disposal by the state, forcing local governments to incur the cost of diverting these products from the waste stream. An interview participant provided the following input on program costs and meeting public demand:

> For cost reasons an effective program is a program where you have unlimited funding where you can staff your facilities so that there's no backup but these programs are expensive, you're dealing with hazardous waste. When you dispose of something as a hazardous waste the cost is usually to 2-3 times higher than buying it as a material, because the method of disposal, methods of treatment, methods of incineration, dealing with the cost you have the infrastructure in the state of California everything goes out of state. (County HHW Facility Manager 2016)

The high costs of HHW disposal have been an impetus to move toward manufacturer engagement; however, targeted products can be chosen for a variety of reasons. In the subsections below each selected product category will be analyzed to determine the perceived social and environmental threats which have perpetuated movement toward EPR-based legislative solutions.

Mercury Thermostats

Mercury thermostats are a product category which had an EPR-based framework complete the California policy implementation process prior to paint. AB 2347 was implemented in 2008 and declared in Section 1:

> The Legislature finds and declares all of the following: (indent?)
>
> (a) Mercury that is released into the atmosphere can be transported long distances and deposited in aquatic ecosystems, where it is methylated to methylmercury, the organic and most toxic form of mercury.
>
> (b) Methylmercury bioaccumulates and biomagnifies in animals, including fish and humans.
>
> (c) The March 2007 report of the Office of Environmental Health Hazard Assessment stated that fish consumption advisories exist in about 40 states, including, within California, for the San Francisco Bay and Delta, Tomales Bay, and eight other county water bodies, and more locations may be included as more fish and water bodies are tested.
>
> (d) Methylmercury is a known neurotoxin to which the human fetus is very sensitive.
>
> (e) The federal Centers for Disease Control and Prevention estimate that between 300,000 and 630,000 infants are born in the United States each year with mercury levels that are associated, at later ages, with the loss of IQ.
>
> (f) New evidence indicates that methylmercury exposure may increase the risk of cardiovascular disease in humans, especially adult men.
>
> (g) According to a 2004 study by the federal Environmental Protection Agency, more than 10 percent of the estimated mercury reservoir still currently in use in

the United States resides in mercury-added thermostats.

(h) Decreases in local and regional sources of mercury emissions have been shown to lead to decreases in mercury levels in fish and wildlife. (Mercury-added thermostats: collection program, 2008)

These various statements clearly illuminate the legislations focus on abating the well documented effects of mercury on human and environmental health. While paint was targeted primarily due to volume and subsequent cost within the HHW stream, it appears that the primary concern with mercury thermostat disposal was threats to human and environmental health. These concerns led the state to ban the sale of mercury thermostats with passage of AB 1369 in 2004. The law banned the sale of mercury containing thermostats by January 1, 2006 and prohibited landfilling by the same date. This landfill ban and re-characterization of mercury thermostats as hazardous waste created new disposal requirements for the product, requiring additional measures be taken by entities across the state to ensure the product was properly collected and disposed.

Pharmaceuticals

Passage of SB 212 in September 2018, the Solid Waste: pharmaceutical and sharps waste stewardship, demonstrates a recent surge in political will to implement EPR-based legislation for unwanted or unused medications. Prior to action at the state level, Alameda County was the first jurisdiction, nationwide, to implement a pharmaceutical collection program in 2011. The ordinance begins with a declaration of findings:

The Board of Supervisors hereby finds and declares the following:

A. Legal medicinal drugs are a necessary medical technology that successfully allows us to live longer, healthier, and more productive lives;

B. The public, particularly children and the elderly, are at significant and

unnecessary risk of poisoning due to improper or careless disposal of prescription and non-prescription drugs and the illegal re-sale of prescription drugs;

C. Our groundwater and drinking water are being contaminated by unwanted, leftover or expired prescription and non-prescription drugs passing through our wastewater treatment centers;

D. There is no mandatory statewide drug stewardship program for unwanted drugs in California, and drug manufacturers and producers have not offered any support for a permanent collection program to date. (Safe Drug Disposal Ordinance 2012, 1)

These statements summate that prescription drugs have abundant value to society and thus we cannot expect this product category to be phased out or extensively redesigned to abate perceived threats. Therefore, local jurisdictions strongly felt that manufacturers should play a role in mitigating the negative externalities their product creates, noted in the Alameda ordinance as concerns regarding overdose episodes and water contamination. According to a report by the California Department of Public Health, "Opioid pharmaceutical□related deaths also showed a peak of 1,616 deaths in 2009 and represented 82% of the total opioid□related deaths." (State of California Strategies to Address Prescription Drug (Opioid) Misuse, Abuse, and Overdose Epidemic in California 2016, 3) Concerns that vulnerable populations may gain access to accumulated pharmaceuticals in the home have driven affected stakeholders to strive for legislative solutions to address a growing social concern. Beyond, these imminent threats to public health and safety lay concerns that these pharmaceuticals may be accumulating in our water ecosystems. Culmination of these factors surmounted enough evidence to create action from concerned policymakers at the local level. A threshold to action failed to materialize at the state level for many years, however persistent action by local

governments throughout the state, in the form of local ordinances, enabled dialogue to continue and eventually produce implementation at the state level.

Carpet

Carpet is a product category which has been targeted for EPR-based legislation due to quantity and physical size within the waste stream, as well as concerns regarding long-term resource sustainability. While other product categories analyzed in this section were categorized as hazardous waste and banned from landfill disposal, carpet is not banned from landfill disposal. A 2014 waste characterization study found that an estimated 570, 212 tons of carpet was disposed of statewide (Cascadia Consulting Group 2004, 6). The EPR-based framework for carpet, enacted in 2010, states in the public resource code that, "The purpose of this chapter is to increase the amount of postconsumer carpet that is diverted from landfills and recycled into secondary products or otherwise managed in a manner that is consistent with the state's hierarchy for waste management practices pursuant to Section 40051." Additionally, AB 2398 states:

> The California Integrated Waste Management Act of 1989, administered by the Department of Resources Recycling and Recovery, is required to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible in an efficient cost-effective manner to conserve water, energy, and other natural resources. (Product Stewardship for Carpets, 2010)

This legislative language suggests that carpet was targeted for EPR-based legislation based on desires to adhere to foundational waste management laws which look to institute long-term resource sustainability initiatives in California. Out of all products selected for analysis, these results show that carpet most strongly embodied strong political will for EPR implementation stemming from concerns over resource

sustainability and recycling markets.

Household Batteries

Batteries are a consumer product, like paint, targeted for an EPR framework due to stakeholder concerns pertaining to toxicity and volume in the waste stream. Household batteries are included in the states "universal waste" designation and are defined by the Department of Toxic Substances Control (DTSC) as:

> California's Universal Waste Rule allows individuals and businesses to transport, handle and recycle certain common hazardous wastes, termed universal wastes, in a manner that differs from the requirements for most hazardous wastes. The more relaxed requirements for managing universal wastes were adopted to more easily ensure they are managed safely and not disposed of in the trash. (DTSC Universal Fact Sheet 2010, 1)

This designation as a landfill banned waste category creates a substantial quantity of material which must be managed outside of the general solid waste and recycling stream, resulting in significant burdens to collect and dispose of.

The 2014 CalRecycle waste characterization study estimated that 11,887 tons of batteries were discarded in the state. (Cascadia Consulting Group 2004, 6) CalRecycle states on their website, "According to a report entitled, Household Universal Waste Generation in California, August 2002, there were 507,259,000 batteries sold in California in the year 2001." According to survey results published in the report, only 0.55% of these batteries were recycled. The state has taken steps toward mitigating waste batteries perceived threats, yet no enforceable legislative framework currently exists. Batteries represent a toxic waste stream which has immense usage by the general public and currently does not have a legislative framework to divert, collect, and process the materials. The problem seems to be acknowledged by California stakeholders at the

government and non-profit level, however there is yet to be a threshold reached in terms of political will within the state legislature.

Industry Engagement in Policy Processes

As noted during interviews with stakeholders, EPR-based legislation is often a contentious policy agenda to pursue. This contention can arise from concerned legislators or public entities, but is often spearheaded by resistance from the targeted industry group. Paint manufacturers demonstrated a degree of willingness to engage with government and NGO representatives on potential legislative solutions to waste paint management. The dialogue process and resulting MOU established much of the legislative framework which was utilized for the paint stewardship law in California. The dialogue was a lengthy process enabling involved stakeholders to work through preconceived ideological differences and understand various definitions of the problem and solution. The communicative processes undertaken during this stage enabled EPR-based legislation for paint to establish itself on the political agenda and eventually proceed toward policy implementation. In the case of paint, the MOU dialogue resulted in formation of an industry PRO, PaintCare. The PRO's website states, "PaintCare, the paint industry non-profit established in response to implementation of the paint stewardship pilot program in Oregon in 2009, was a direct result of the signed MOU and pilot program." Each of the targeted product categories will be analyzed for the degree of industry engagement pertaining to legislative EPR-based frameworks and whether the engagement hindered or helped the implementation process.

Mercury Thermostats

The mercury industries PRO, Thermostat Recycling Corporation, states on their website that the organization:

> Is a non-profit stewardship organization that facilitates and manages the collection and proper disposal of mercury-containing thermostats. Originally founded in 1998 by Honeywell, White-Rodgers, and General Electric as a voluntary venture, we established our mission to promote the safe collection and proper disposal of mercury-containing thermostats.

This voluntary initiative was established ten years prior to implementation of the thermostat recycling law in California:

> In 1998, thermostat makers General Electric, Honeywell, and White Rodgers, established the TRC to implement a program for collecting used mercury-added thermostats. Under the TRC program, thermostat wholesalers and contractors volunteer to collect thermostats from heating, ventilating, and air-conditioning contractors, and the general public. In 2007, the manufacturer Nordyne joined the program and the TRC expanded its voluntary program to household hazardous waste facilities. (Mercury-added thermostats: collection program, 2008)

It appears that the battery industry may have foreseen the need to engage in end-of-life dialogue, well before many other products were on the EPR radar, as evident by the PRO's formation in 1998. These voluntary actions demonstrate manufacturer willingness to engage with waste management concerns for their product category. While thermostat manufacturers did not technically enter into any extensive preliminary dialogue process with concerned stakeholders, they did stablish lines of communication between involved actors, illuminating interpretations of the problem and solution. The industries open position to dialogue can also be interpreted as a tactic to stall efforts to maximize end-of-life collection efforts.

Household Batteries

This product category is another situation in which industry entered the dialogue process prior to any legislation in California being enacted. In 1994, battery manufacturers came together to form the PRO Call2Recycle whose purpose was "to address the emergence of EPR legislation." (Ellis, Todd. 'Overview of the Call2Recycle Program'. Presentation, Northeast Resource Recovery Association, 2017) In 1994, EPR was a fledgling legislative term which possessed very limited applications across the globe; however, industry representatives may have seen the forthcoming shift in end-of-life management for their product. These voluntary efforts have been implemented across the US, with certain states choosing to implement legislation to govern the trajectory of these end-of-life collection efforts.

Within CA, batteries are classified as hazardous waste and are thus required to be diverted from landfill disposal. CalRecycle states on their website "According to a report entitled, Household Universal Waste Generation in California, August 2002, there were 507,259,000 batteries sold in California in the year 2001. According to survey results published in the report, only 0.55% of these batteries were recycled." Furthermore, CalRecycle states on their website that "All batteries in California that are intended for disposal must be recycled, or taken to a household hazardous waste disposal facility, a universal waste handler (e.g., storage facility or broker), or an authorized recycling facility." All these efforts to divert and collect batteries were taken nearly 12 years after Call2Recycle had begun operations and this most recent groundswell of support may have been perceived as necessary due to a lack of meaningful improvements on

deliverables from the existing program.

Furthermore, in a 2017 PowerPoint presentation by Call2Recycle's Todd Ellis, Northeast Regional Account Manager, the following text is utilized in the presentation: "Our existing mostly voluntary program has muted attempts to impose mandatory requirements on industry." and "The battery industry has reassessed its proactive position on promoting EPR legislation. No longer in support." These statements clearly show that the battery industry is utilizing their engagement on the topic as a means to curtail attempts to implement more robust EPR-based frameworks for household batteries.

Carpet

Industry engaged in an EPR-based dialogue process in 2002 when they met with concerned stakeholders, eventually signing a national MOU on end-of-life management. The agreement required many benchmarks be voluntarily met over a ten year period. At the ten year mark, an analysis based on a set criterion would be used to evaluate necessary steps moving forward. This MOU served as a means to facilitate dialogue between parties with the ultimate intention of producing a model legislative framework much like the resulting MOU paint framework. Upon this sunset date a voluntary plan was put forth by the industry non-profit, Carpet America Recovery Effort (CARE), which included the following language on intent moving forward:

> As part of the industry's government relations activities, promote and support the CARE mission to facilitate the Carpet-industry led initiative through the Carpet and Rug Institute (CRI) to find market-driven solutions to the diversion of Post-Consumer Carpet from landfills and oppose efforts to enact EPR (extended producer responsibility) –type legislation or regulations. (People, Bob. Voluntary U.S. Product Stewardship for Post-Consumer Carpet, Carpet America Recovery Effort 2014, 8).

This statement is a clear indication that the carpet industry was not yet willing to allow an EPR-based legislative framework to proliferate, but were willing to meet the requirements of a government mandate. This indication that EPR-based legislation would not be a satisfactory topic for discussion at the national level, invited state jurisdictions to decide for themselves whether they wanted to pursue a more rigorous program for industry to adhere to.

California was the first state to implement a carpet product stewardship law with passage of AB 2398 in 2010. The framework had many of the same provisions as the MOU, but contained more tools for enforcement, driving industry toward more meaningful results, demonstrated by the following:

> In order to achieve compliance with this chapter, a carpet stewardship organization shall, on or before July 1, 2013, and annually thereafter, demonstrate to the department that it has achieved continuous meaningful improvement in the rates of recycling and diversion of postconsumer carpet subject to its stewardship plan and in meeting the other goals included in the organization's plan. (Product Stewardship for Carpets, 2010)

The carpet industry demonstrated an unwillingness to allow certain concessions to local government and NGO groups, resisting certain regulations which would increase deliverables and accountability. Even after passage of the state law in 2010, an additional bill was enacted in 2017, spearheaded by the non-profit California Product Stewardship Council (CPSC) to improve program performance. The carpet industry has had a sustained presence in end-of-life dialogue at the state level and has engaged with policymakers for many years, producing both breakthroughs and setbacks. This engagement with the topic of EPR has allowed for meaningful action to take place in California, as the law continues to evolve.

Discussion

The Howlett et al. (2015) five stream confluence policy stream model provided an analysis framework for this research. The model facilitated an understanding of key factors promoting and inhibiting the development and implementation of waste paint EPR-based legislation in California. This research found that important factors in maintaining momentum through the policy implementation process were prominently influenced by an extensive dialogue process undertaken amongst concerned stakeholders, fueled by a growing consensus on the need for a legislative solution. Industries are beginning to understand that involvement in end-of-life dialogues for their products is necessary if they wish to control or at least influence any mandatory EPR-based collection frameworks for their product. While this early engagement does present many advantages for industry stakeholders, it does not preclude government or other policy advocates from looking to push the progressive nature of the policy framework with intent to create their desired outcomes. Insights were gleaned as to why certain factors of time and place benefit certain product categories, while jeopardizing policy framework implementation for others. On a larger scale, study findings suggest that an EPR "policy entrepreneur" is influential in moving the product category through the agenda setting stage and sustaining momentum through the entire policy implementation phase.

Five Stream Confluence Model: Waste Paint

The foundation of all policy stream literature stipulates that a variety of factors, interconnected but separate, must align at either one or multiple points within the policy implementation process to achieve final implementation. This alignment, within the

context of policy streams models, is represented by what Howlett et al. (2015) terms confluence points. If the process is unable to achieve confluence points along the path toward policy implementation, the process will not be able to move forward though the necessary windows of opportunity and achieve a resolution. Appraisal points within the model also represent points at which the paint policy implementation process was at risk of stagnation and possible dissolution.

The ability of policy streams to avoid entry into excessive turbulent confluence points and rather sustain continued progress is reliant on a multitude of factors working together. The process favors a collaborative group of stakeholders committed to maintaining progress regardless of points of tension, stagnation, and possible dissolution of the process. While EPR-based legislation for paint did encounter a variety of turbulent confluence points as it moved through the agenda setting and policy implementation process, it ultimately managed to complete the process due to fear of missing out and a degree of compromise from involved stakeholders. As found in research question 1, government stakeholders aimed to sustain dialogue talks, as an engaged industrial sector would prevent legal tie-ups, and produce a take-back program faster, and generate a framework which at a minimum would assist local governments with collection and diversion. On the other side of the spectrum, industry maintained engagement as they saw the dialogue and policy implementation process as an opportunity to impart influence on any forthcoming policy framework. Throughout the process non-profit entities were inclined to establish a position in cohesion with local government jurisdictions while also allowing for industry concessions**.** This analysis will now look to uncover a better

understanding of how these factors influenced the implementation process from start to finish.

Preliminary Agenda Setting Phase

The five stream confluence model commences with convergence of Kingdon's (1995) three primary policy streams, consisting of the problem, policy, and politics. These three streams must align within this agenda setting phase to enable the issue to be placed on the political agenda. Within the case of waste paint, this portion of the policy stream model took place predominantly outside the policy realm of California, although CalRecycle was involved in the national MOU drafting process. Obstacles to reaching confluence point 1, where the agenda setting phase transitions into the policy formation phase, were rooted in whether paint as a waste stream necessitated a legislative solution. Early in the agenda setting phase, involved stakeholders were able to agree on many details which constituted the problem stream. This early consensus crystalized the problem stream, recognizing paint as a waste stream which merited an EPR-based framework for take-back efforts. While stakeholder consensus within the problem stream was obtained early in the dialogue process, stakeholder perspectives and expectations within the policy and politics streams required further discourse to allow for the merging of streams.

The second stream to crystallize within the agenda setting phase, and subsequently merge with the problem stream, was the politics stream. The politics stream can be understood as the involved actors and the agenda they adhere to. The willingness of concerned stakeholders to meet at the negotiation table enabled political will to gain momentum over time. As each stakeholder group interpreted other perspectives, they

gradually became bound to the process as retracting would prove more tumultuous. This crystallization of the politics stream held through the remainder of the MOU dialogue process, enabling the legislative framework to avoid turbulence usually encountered after passing through the agenda setting "window of opportunity."

The last stream to merge during the agenda setting phase was the policy stream. As the problem and politics stream merged due to contextual realities of the paint dialogue, the policy stream was more reluctant as consensus on policy details was highly contentious. Throughout the dialogue, policy tools were debated and agreed upon, enabling gradual merging of the policy stream with the problem and politics streams. The agenda setting phase essentially took place throughout the MOU dialogue process. As discussed in the findings of research question 1, the MOU dialogue process brought diverse stakeholders to the negotiation table to initiate talks on defining the waste paint problem. The three agenda setting streams merge at what Howlett et al. (2015) terms confluence point I, the first "window of opportunity". This window is an opportunity for the policy topic to place itself on the California policy agenda and enter into subsequent phases of the implementation model, the policy formation and decision making phases.

Once the three streams converged and passed through the agenda setting policy window they enter what Howlett et al. (2015) phrases the policy formation process. Traditionally, this is the point at which debate amongst policymakers' moves into specifics regarding the type of legislative framework and specific policy instruments needed to solve the waste paint issue. In a traditional policy implementation process this can be fraught with heightened negotiations and subsequent turmoil over bill language.

Different stakeholder groups are looking to preserve their interests as discussions venture into policy specifics. The unique circumstances of the waste paint policy implementation process allowed much of the tumultuous negotiations and policy crafting to be completed prior to the policy entering the California policy implementation process. In this case, California was presented with a policy framework developed outside of the state's political sphere; however, as previously mentioned, the state did have a role in crafting the policy framework developed during the paint MOU dialogue. This scenario enabled the policy formation process, the first portion of the five stream confluence model's two part implementation process, to more easily progress forward. This smooth progress can be attributed to tumultuous confluence points being encountered during the MOU dialogue process rather than the California policy formation process. Within the five stream confluence model, as streams move into the policy-making and decision-making phases, there is the introduction of two additional streams which impart their influence on the policy and decision-making phases. These influences are known as the program and process stream.

The process stream can be understood as the governing rules within the California legislative process and may include the following: deadlines, public comment periods, permissible actions. Ultimately these are the rules which govern the lawmaking process within California. These democratic lawmaking tools are intended to create a more transparent and inclusive lawmaking process and require involved stakeholders to be accountable and responsive to established proceedings. The "programme" stream represents any new policy tools introduced during the implementation process; however,

because much of the policy framework was solidified during the MOU dialogue process, this stream did not have significant influence during the policy formation stage of the process. These two additional streams impart their influence to varying degrees throughout the policy implementation process. All five streams ultimately interact and influence each other as they move toward implementation:

> Unlike any of the other potential streams model, a degree of complexity is recognised because the five streams can be nested within each other to help explain different types of policy making and the way in which one particular stream can be in effect an agenda setter, setting the parameters for other streams within it. (Howlett 2015, 9)

Dominant Policy Stream

Howlett et al. (2015) states that as all five streams flow along toward their goal of policy implementation, there will be a stream which exerts more influence on the process. He describes the non-dominant streams as being "nested" within the dominant stream; the dominant stream is able to control the direction and flow rate of the other subverted streams. Howlett et al. (2015) states "This suggests qualitatively different kinds of policy making at each intersection point depending on exactly which stream guides the current at a particular point in the policy-making process…" (Howlett 2015, 9) Within the California EPR-based policy implementation process for waste paint the "policy" stream can definitively be labeled as dominant within the policy formation segment of the process. Much of the policy language was solidified during the MOU dialogue process, forcing other streams to conform to these predetermined metrics. This allowed policy streams to more easily merge during the policy formation phase and proceed through another policy window at confluence point II, commencing the decision-making phase of

the process.

Decision-Making Phase: Waste Paint

Entrance into the decision making phase brought about a new dominant stream, causing the process to become stagnant within subsequent points of appraisal. The decision-making phase is defined as the point at which "policy makers begin to focus their attention on how far they have come (e.g., in terms of available policy alternatives, feedback from stakeholders) and how to proceed towards a final decision or decision." (Howlett et al. 2014, 9) This is the point within the California policy implementation process where CalRecycle moved to institute regulations to guide the proposed law into final implementation. Implementation of regulations requires the state agency to move into a rulemaking process which constitutes a public comment period. The paint industry resisted movement into a rulemaking process resulting in a turbulent appraisal point after entering the decision making phase. Movement into the rulemaking process enabled the process stream to assert dominance over the flow of policy streams, as all other streams were now reliant on input from the rulemaking process. As various ideals clashed during the rulemaking process, the "programme" stream gained heightened influence as it brought about potentially new policy tools that local governments hoped to institute. This rulemaking process invited new stakeholder opinions, resulting in a prolonged public comment period encompassing four rounds of submissions.

Howlett et al. (2015, 6) defines the "programme" stream as "designed to calibrate new "programme" instruments and integrate them with established ones." The mere movement of CalRecycle into the rulemaking process brought about an appraisal point

fueled by industry resistance. According to industry, many of the proposed regulations looked to expand the scope of the legislation and would not allow California to receive an EPR-based program for paint in a timely manner. These mostly failed efforts to expand the EPR policy tool kit of the CPSL highlighted the states limited ability to create certain types of change. Even after completing the implementation process the paint industry was not willing to accept the increased reporting requirements that CalRecycle insisted upon during the rulemaking process, resulting in a legal battle between PaintCare and CalRecycle.

Ability of Policy Streams to Merge: Product Category Comparison

The politics stream, or rather political will, was tested and affirmed early in the paint implementation process. It was quickly found that ideological differences would need to be reconciled as each group had much to lose by not engaging. The paint industry decided to engage policymakers, rather than oppose at all costs, thus allowing merging of policy streams within the agenda setting phase. While it appeared that the "policy ship" may wreck at many moments throughout the implementation process, it was able to successfully navigate downstream to achieve implementation in California. Certain products analyzed within research question 3, failed to align within the agenda setting phase or did not accumulate the necessary external impetus to facilitate confluence of all policy streams. Analysis of each targeted product category allowed for determination of where, how, and if policy streams merged and achieved confluence points.

Household Batteries

Household batteries are banned from landfill disposal, yet their classification as a

waste stream banned from landfill disposal seems to be overlooked as California does not currently have a robust take-back program for this common waste stream. As illuminated in research question 3 the battery industry took voluntary action on end-of-life management, resulting in a lack of legislative frameworks enacted by local governments. Industry engaged with collection and recycling efforts in the 1990's and these actions have been perceived as a good faith effort by industry, stymieing future efforts to implement end-of-life frameworks. California passed AB 1125 in 2005, the Rechargeable Battery Recycling Act; legislative language states the following:

> A retailer, defined as a person who makes a retail sale of a rechargeable battery to a consumer in this state, to have in place a system for the acceptance and collection of used rechargeable batteries for reuse, recycling, or proper disposal with specified elements, including the take-back at no cost to the consumer of a used rechargeable battery. (AB 1125 2005)

However, no enforcement mechanism is present in the law, and as stated in research question 3, a Call2Recycle representative highlighted the fact that their voluntary actions have held off broad implementation of EPR-based laws and frameworks. These actions have resulted in the inability of policy streams to merge within the agenda setting phase, as the politics stream lacks the necessary political will. The problem stream is muted by industry action and these factors overshadow details pertaining to the policy stream.

Pharmaceuticals

EPR-based legislation for waste pharmaceuticals is another product category which for many years failed to facilitate merging of policy streams within the California agenda setting phase. Review of legislative efforts finds the problem stream lacking in clarity as there was not a clear reason as to why convenient medication collection and disposal was

a necessary social service. In recent years the prescription opioid epidemic, along with trace amounts of pharmaceuticals found in marine wildlife, have created a swell toward increased diversion and collection as a means to protect public health. Alameda County was the first jurisdiction to implement an EPR-based policy framework for the product category, with other jurisdictions following in subsequent years. While the problem has become more clearly defined, the politics stream is filled with staunch opponents within the pharmaceutical industry. Lawsuits and resistance have been prevalent in the California policy sphere, with recent passage of SB 212 representing monumental action at the state level. While this product category has undoubtedly garnering increased attention in recent years, EPR-based legislation for pharmaceuticals at the State level had failed to pass through the agenda setting for years. The product category recently managed to navigate the policy agenda setting phase achieving implementation of SB 212 in 2018. The legislation will now need to navigate the rulemaking process to achieve final policy implementation.

Carpet

Carpet as a waste stream has long been a bulky waste item and has been disposed into landfills in substantial volumes throughout the state. This waste stream has been a concern for local waste managers as bulky materials represent significant volumetric consumption in landfills and ultimately raise concerns over widespread resource sustainability. While the problem stream was more clearly defined in this instance, the politics stream struggled to materialize and merge, as the topic had limited California stakeholder engagement prior to the EPR-based law being implemented. Eventually the

politics stream merged with the problem stream, awaiting alignment with the policy stream to achieve movement forward. CARE had been operating for years and had presented their ideas of what EPR-based policy for end-of-life carpet would entail, but ultimately encountered resistance from government and non-profit stakeholders. A "fix-it" bill was passed in 2017 to remedy some of the issues encountered with the original legislative language. CARE was already established prior to passage of AB 2398 in 2010, demonstrating that industry had been engaged with end-of-life concerns for their product prior to passage of the law. This engagement, coupled with continued dissatisfaction from government and non-profit stakeholders, illuminates the perception that policy stream details have not enabled confluence of all policy streams within the decision-making phase.

Mercury Thermostats

Policy streams for mercury thermostats were able to merge within the agenda setting phase and proceed through the initial policy window. Mercury thermostats represent an additional product category which has seen significant action taken by the industry prior to substantive talks on a legislative solution for end-of-life management. This engagement by industry allowed for policy streams to more easily merge within all phases of the policy implementation process, but required compromise and consideration of various stakeholder expectations and realities.

A variety of factors influenced by time and place have hampered and perpetuated implementation of EPR-based frameworks for a variety of products in California. Passage through the agenda setting phase is paramount in initiating dialogue on what a legislative

solution would entail for government and non-profit stakeholders. While the implementation processes for carpet and mercury thermostats were able to complete the agenda setting phase with relative ease, pharmaceuticals and batteries have long encountered tumultuous obstacles in moving through the agenda setting phase. Pharmaceuticals have recently overcome obstacles within the agenda setting phase due to public notoriety. Batteries have just recently gained the necessary momentum to overcome industry resistance due to a rise of lithium ion battery fires, which have highlighted concerns surrounding human and environmental health. As California continues to institute progressive EPR-based waste management policies, policy streams will more easily merge due to a shifting culture of preemptive action and expectations at the state level.

Conclusions & Recommendations

This research intended to uncover the multitude of factors which helped and hindered an EPR-based policy framework from achieving implementation in California. An extended preliminary dialogue process amongst involved stakeholders was found to be both an important factor in facilitating broad acceptance of the problem under investigation and in developing a subsequent plan of action. The dialogue process is crucial to facilitating movement forward within the implementation process, as it enables points of contention to be addressed and worked through. Within the context of waste paint, fear of action or lack thereof, outside of the constructs of the MOU dialogue process, forced involved stakeholders to remain engaged and diligent as dissolution of the process would be detrimental to all. When dealing with EPR-based legislation, industry often views stakeholder engagement as an opportunity to contribute to the dialogue and impart their influence on any resulting legislative framework. Local governments and non-profit advocates engage in the dialogue process as a final program framework is desired to enable cost and materials management relief. Engagement at this point in the process facilitates less tumultuous encounters with industry, as battles involving lobbyists at the state capitol will often require more arduous efforts to achieve implementation. The dialogue process is a crucial undertaking, as the mix of stakeholders and viewpoints, will strongly influence whether a resolution can be obtained.

Depending on the specific industry stakeholder targeted, the level of dedication to initiate or carry through a stakeholder dialogue process on end-of-life product management will vary. Within some dialogue processes, the stakeholder may be

determined to stay involved and produce an outcome. In other instances there may be ulterior motives at work aiming to stall the process and thwart efforts to implement an EPR-based framework by refusing certain concessions or insisting on voluntary actions. The battery and carpet industry are prime examples of a dedicated industry which has managed to engage in dialogue, while simultaneously resisting broad or progressive EPR-based policy implementation. In recent years, industry has been more willing to engage in dialogues, while still aiming to produce outcomes they deem favorable.

The two "fix-it" laws passed for carpet, along with continued efforts to implement an EPR-based framework for household batteries, demonstrate a desire from the legislature to implement waste management policy solutions for burdensome product categories. Movement of California toward more progressive waste management agendas is also a desired destination for California waste management policy. Dire impacts associated with end-of-life concerns for specific product types can represent threats to human and environmental health. A prime example highlighted by the case of growing concerns surrounding pharmaceutical accumulation in waterways and wildlife. This strong impetus for proactive pharmaceutical waste management efforts took many years of local government ordinances to finally achieve the political momentum needed for implementation at the state level. This cascade of implementation highlights the need for a local government EPR champion to act as a "policy entrepreneur."

Alameda County was the California pharmaceutical EPR-based policy entrepreneur, pushing the product category through the agenda-setting phase. This momentum was created by public notoriety, and helped policy stakeholders who were in favor of a

pharmaceutical EPR-based framework build their case as to why industry needed to engage with end-of-life concerns. Increased recognition by political actors across the local spectrum is important for gaining a swell of support to implement a policy solution.

Within the U.S., local governments are often the "policy entrepreneur" responsible for spearheading legislative efforts for a targeted product. Statewide waste management legislation is often the result of outcry from local governments, and for some product categories, these jurisdictions are first to implement EPR-based frameworks. Local governments are able to assume the role of "policy entrepreneur," as their threshold to action is much less than that encountered at the state level. Local county and city jurisdictions do not have as much opposition in the form of industry lobbyists and beholden politicians; rather they can often act in a more succinct and direct manner to create desired change within their jurisdiction. Electronics, batteries, and pharmaceuticals have first achieved implementation of an EPR-based framework at the city or county jurisdiction, as opposed to the state level.

The paint industry used the final signed MOU as a standard upon which to judge any efforts to institute more progressive policy frameworks. Local jurisdictions and non-profits were repeatedly told that regulations promoting concerns on sustainability and reporting requirements were outside CalRecycle's realm of influence. By staying engaged in the process, industry was able to influence the resulting MOU, essentially creating an industry framework which would heavily influence any forthcoming paint EPR-based frameworks across the country. This rigid framework and subsequent statutory language is an understood risk of engaging with industry in dialogue talks.

Additionally, further cultivation of market development for end-of-life products is desired to expand the potential pool of sustainable solutions to resource consumption and the resulting waste stream. More long term solutions are needed to deter these undesirable end-of-life destinies for products. While the current EPR-based laws in California do stipulate recycling percentages and guide what can be done with a product once collected, further investigation into the topic can produce a more robust return on investment. Ultimately these frameworks aim to show industry that there can be value, financial and social, in rethinking the way they design and produce their products. Additionally, further research should be undertaken to illuminate paths of various product categories as they enter into the policy streams model.

Limitations

This study is constrained by multiple factors that may have hindered the quality and volume of data collected, as well as, accuracy of the analysis process. The number of interviewee participants was small and no industry stakeholders were willing to participate in the interview process. Thus, the interviewee results can only be considered preliminary and are incomplete as the industry perspective was not represented in this aspect of the research. However, industry input on policy implementation was collected through content analysis of public documents, providing an introductory level understanding on industry perspective and interpretation of EPR-based laws in the California. Furthermore, this data gap may limit the ability to identify factors that make product categories more amenable to EPR policy implementation. Although EPR laws for paint have been implemented in other states, California's position as an environmental policy leader make the results of this research somewhat specific to the California policy realm. Insight into how CPSL completed the policy implementation process can provide clarity into paint stewardship laws ability to complete the process in other states. It must also be noted that coding inconsistencies can present challenges within the data collection and analysis phases. However, all coding was conducted by a single researcher to avoid variations in interpretations between different researchers. Steps were taken to ensure that careful coding practices are executed across all data formats. Despite its limitations, this research can shed new light on contentious policy agendas in California, and ultimately serve to better inform policy stakeholders as they look to achieve desired outcomes in the waste management sector.

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Appendices

Appendix A

Semi-structured Interview Questions

1. What is the mission statement/function of your organization?
2. What strategies do you pursue to achieve this mission?
3. How important is public engagement to mobilize your cause?
4. Does your organization coordinate financially/logistically with any other organization, to pursue your mission?
5. Please define extended producer responsibility (EPR).
6. In your opinion, is there a difference between the terms EPR and Product Stewardship?
7. In your own words, what are the intended goals of EPR legislation?
8. What factors influence and/or deter governments from pursuing EPR based laws to manage certain waste types?
9. Who are the key actors/individuals that shape EPR rules and regulations? Are some actors more powerful and influential than others?
10. What elements of EPR are most contentious among involved stakeholders? Any specific examples?
11. Is there a major difference between voluntary and mandatory EPR programs?
12. What criteria does your organization/agency use to evaluate whether a product/material should be considered for coverage under an EPR program framework? In other words, what are some characteristics of the item/material that would warrant the need for Producers to take a more proactive role in collection/disposal?
13. How big of a role do you believe "politics" (rep vs. dem, lobbyists) impart upon the local/state law making process? Specific, impacts on "EPR based" legislation passage?
14. On a scale of 1-5, how aware of waste management/EPR issues due you believe California citizens are?
15. On a scale of 1-5, how conscious of waste management issues are lawmakers at the local/state level?
16. Do you believe any of the current CA laws foster any effort from manufacturers to redesign their products with environmental/recycling concerns in mind?
17. The Alameda County pharmaceutical ordinance explicitly states that no line item fee can be added at the point of sale to fund the program. On the contrary, paint, electronics and cans/bottles have visible fees levied upon their sale. What are your thoughts as to why the Alameda ordinance explicitly states this?

18. What are your thoughts on imparting more financial responsibility onto manufacturers, rather than having consumers pay for costs, as is the common setup in CA? Pre-funded vs. pay as you go?
19. Please describe your interactions/perception/opinions of the Architectural Paint Stewardship law?
20. Will we ever see a national EPR framework? If yes, please identify factors that you believe will help to perpetuate this transformation?
21. Why do you believe that the U.S. lacks much of the same progressive EPR policies as Canada or the European Union (EU)?
22. In your opinion, what are the perpetuating factors of the global increases in waste production?
23. Are you familiar with the concept of Corporate Social Responsibility (CSR)? What are your thoughts on companies integrating social concerns into their institutional structure?

Appendix B

Interview Recruitment Email

Department of Environmental Studies · *Center for the Development of Recycling* · Santa Clara County Recycling Hotline · One Washington Square San Jose, California 95192-0204 · 408/924-5453 · 800/533-8414 · Fax 408/924-426 · www.RecycleStuff.org · info@recyclestuff.org

To Whom it May Concern,

I am a graduate student within the Environmental Studies Department at San Jose State University and am contacting you today in an effort recruit participants for my masters thesis research. The project intends to look inside the “black box” of policy making in an attempt to better understand how involved stakeholders construct their narrative around extended producer responsibility (EPR) legislation and how these "storylines" shape the final policy instruments (administrative tools, informative tools, economic tools) within EPR (product stewardship) laws.

There appears to be a growing movement across the United States to implement these types of legislative frameworks and due to your position as an influential stakeholder I would cherish the opportunity to gain your perspective on the topic. Participation would involve either a 20-30 minute interview over the phone or completion of a 15 question questionnaire. If there is another individual within your organization that can more aptly fulfill my request I would appreciate you providing me with their contact information. All collected information will be presented anonymously.

If you would be willing to participate, please inform me at your earliest convenience. I have attached the questionnaire so you may glean my research intentions. A consent form will need to be signed and returned if you choose to participate.Your time and consideration are greatly appreciated.

Best Regards,

Justin I. Weiss

SJSU Graduate Studies Candidate

Santa Clara County Recycling & Household Hazardous Waste Hotline, Project Manager

(858) 254-3179

Appendix C

Interview Consent Form

REQUEST FOR YOUR PARTICIPATION IN RESEARCH

TITLE OF STUDY

Stakeholder narratives and their impact on implementing extended producer responsibility (EPR) policy: A California policy implementation case study

NAME OF THE RESEARCHER

Justin Weiss Master's of Science Candidate Department of Environmental Studies San Jose State University

ADVISOR TO THE RESEARCHER

Dustin Mulvaney, Ph.D Assistant Professor Department of Environmental Studies San Jose State University

PURPOSE

Proper disposal of hazardous or troublesome products has become an increasingly mandated and expensive undertaking for government. Dues to constrained budgets and a growing cultural of environmental consciousness governments have begun to engage manufacturers in the process of contributing to disposal efforts associated with their products. The purpose of this research is to look inside the "black box" of policy making to better understand how involved stakeholders construct their narrative on EPR laws and how these storylines shape decisions to enact particular policy instruments (administrative tools, informative tools, economic tools) within the laws.

PROCEDURES

You will be asked to participate in a 30-60 minute interview either in person or over the phone/computer. All interviews will be recorded on one/two devices depending on the type of interaction between researcher and subject. In-person interviews will be recorded on a digital recording device and an iPhone. Phone/computer interviews will be recorded on the selected device.

POTENTIAL RISKS

There are no known risks involved in participation of this study beyond being recorded on an electrical device.

POTENTIAL BENEFITS

Participation in this research can serve to further inform policy makers who have begun to embrace the benefits afforded by Extended Producer Responsibility (EPR) based legislation, as well as companies who wish to take a more proactive and responsible approach towards their product's eventual disposal. Studying the current crop of EPR based laws in the State and their influences on hazardous waste disposal costs and logistics can help to further perpetuate the swelling movement of "producer responsibility" laws across the state and country.

COMPENSATION

No compensation will be given for participation

CONFIDENTIALITY

No identifying information will be used in the final analysis of collected data. However, due to the content of certain responses, it is possible that the identity of an

individual could be deduced.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary. You can refuse to participate in the entire study or any part of the study without any negative effect on your relations with San Jose State University or [name any other participating institutions]. You also have the right to skip any question you do not wish to answer. This consent form is not a contract. It is a written explanation of what will happen during the study if you decide to participate. You will not waive any rights if you choose not to participate, and there is no penalty for stopping your participation in the study.

QUESTIONS OR PROBLEMS

● For further information about the study, please contact: Justin Weiss. (858) 254-3179, jweiss.925@gmail.com

● Complaints about the research may be presented to Dr. Lynne Trulio. (408) 924-5445, lynne.trulio@sjsu.edu

● For questions about participants' rights or if you feel you have been harmed in any way by your participation in this study, please contact Dr. Pamela Stacks, Associate Vice President of the Office of Research, San Jose State University, at 408-924-2479.

SIGNATURES

Your signature indicates that you voluntarily agree to be a part of the study, that the details of the study have been explained to you, that you have been given time to read this document, and that your questions have been answered. You will receive a copy of this consent form for your records.

Participant Signature

_____

Participant's Name (printed) Participant's Signature Date

Researcher Statement

I certify that the participant has been given adequate time to learn about the study and ask questions. It is my opinion that the participant understands his/her rights and the purpose, risks, benefits, and procedures of the research and has voluntarily agreed to participate.

_____

Signature of Person Obtaining Informed Consent Date