

# Are policy failures mobile? An investigation of the Advanced Metering Infrastructure Program in the State of Victoria, Australia

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# **Are policy failures mobile? An investigation of the Advanced Metering Infrastructure Program in the State of Victoria, Australia**

## **Abstract**

This paper is about a case of policy failure and negative lesson drawing, namely the implementation of a mandatory smart metering program - the Advanced Metering Infrastructure (AMI) Program - in the State of Victoria, Australia, in the period 2009-13. The paper explores the framing of policy failure, and the ways in which failed policies might be mobile. The AMI Program provides an important empirical counterbalance to existing scholarship on policy learning, transfer and mobility, which is for the most part about positive best practice case studies, emulation, and the travelling of 'fast' and (by implication) successful policy. There is evidence that the Victorian AMI Program circulated domestically within Australia and was influential in policy decision making, but that its international mobility was limited. The case is used to explore what gets left behind - or is immobile - in the telling of policy stories about failure. Science and Technology Studies scholarship on the inherent fragility of sociotechnical networks is drawn upon to consider how the concept of assemblage - a popular conceptual lens within policy mobility scholarship - might be applied to better understand instances of policy failure.

## **Keywords**

policy transfer; policy mobilities; policy failure; Australia; assemblage; electricity sector.

## **1.Introduction**

This paper is about the implementation of a policy that did not proceed as expected, and came to be labelled a policy failure, namely the Australian State of Victoria's Advanced Metering Infrastructure (AMI) Program (2009-13) (hereafter 'the AMI Program'). The paper explores the learning that took place from the AMI Program and in particular how and why it travelled, with what effect. The politics of framing something as a policy failure is also explored. There is little evidence of international lesson drawing from the AMI Program, however, it did have influence domestically: the AMI Program contributed to a change of policy in the rest of Australia. The National Electricity Market (NEM) in Australia had plans to implement the same mandatory advanced (or 'smart') metering programme as Victoria, but in 2012 NEM policy shifted instead towards a voluntary, market-led approach for the implementation of smart meters, and the Victorian AMI Program was invoked to justify this change in policy (AEMC 2012). Drawing on this empirical case, the paper evaluates whether policy failures circulate and move in similar ways to best practice successful policies, for there is ambiguity in existing scholarship, with a number of authors implicitly equating policy failure with immobility (McCann 2008, McCann and Ward 2015). Further, analysis builds on existing Science and Technology Studies (STS) and urban studies influences within policy mobility scholarship to explore sociotechnical issues pertinent to the movement of policy failures, through the notion of assemblage (Allen and Cochrane 2007, Hardie and Mackenzie 2007). It is suggested that STS ideas about the inherent fragility of sociotechnical networks or assemblages, and their tendency to unravel, can be usefully applied to better understand policy failures, including thinking about what gets left behind - or is immobile - in policy stories about failure.

It is widely acknowledged that the amount of policy transfer and diffusion taking place - the international mobility of policy - has increased in recent decades (Evans and Davies 1999,

McCann 2011, McCann and Ward 2012, Stone 2012). This is attributed to globalisation and improved communications and travel, facilitating the spread of ‘fast policy’ (Peck and Theodore 2015) and associated practices such as ‘policy tourism’ (Hudson and Bo-Yung 2014). A growing emphasis on evidence-based policy making is also identified as a factor (González 2011). The idea of policy transfer - whilst an inherently geographical one, about the movement of policy from one place to another - stems originally from political science, where policy transfer is defined simply as “... the process by which actors borrow policies developed in one setting to develop programs and policies within another.” (Dolowitz and Marsh 1996: 357). Policy transfer is often used as an overarching ‘umbrella term’ that encompasses lesson drawing, diffusion and policy learning (Evans and Davies 1999), although this positioning of policy learning as a subset of transfer has rightly been criticised (Bulkeley 2006). In this paper, however, for reasons of brevity I concentrate on scholarship about the movement of policy, rather than wider literatures on policy learning.

Scholarship on policy transfer has grown considerably since early political science contributions (Walker 1969, Rose 1991, Bennett and Howlett 1992, Dolowitz and Marsh 1996, 2000). Stone (2012), for example, recently identified over eight hundred papers on the topic. Policy transfer has also in the process become a significantly more interdisciplinary topic of research (Benson and Jordan 2011, McCann and Ward 2012). A ‘new wave’ of scholarship - termed policy mobility - has been led principally by geographers and urban studies scholars. It has challenged the political science conceptualisation of policy transfer on a number of grounds, including the portrayal of policy transfer as a rational process, and an overemphasis on the role of states and government-to-government transfer (Ward 2006, Peck and Theodore 2010, McCann 2011, Peck 2011, Clarke 2012, Prince 2012). Valuable ideas and concepts from economic geography, urban studies and STS have been introduced

including neoliberalism, relational geographies, governmentality and assemblage, along with a host of new terms including policy mobility, translation and mutation.

The idea of mutation of policies counters the rather static portrayal of policy transfer and diffusion within political science, with policies characterised as moving largely unaltered from one nation-state to another, driven by a rational search for policy solutions. Such an unproblematic, linear characterisation has been subject to critique on a number of grounds (Bulkeley 2006), with McCann and other policy mobility scholars arguing that “Policies, models, and ideas are not moved around like gifts at a birthday party or like jars on shelves, where the mobilization does not change the character and content of the mobilized objects.” (McCann 2011: 111). Relatedly, policy mobility scholars have been considerably more attentive to precisely what constitutes policies – their sociotechnical *assemblage*, defined in the context of policy mobility as “... a purposive gathering of people, institutional capacities, expertise, models, techniques and technologies, political sustenance... from local sources and, crucially, from elsewhere.” (McCann 2011: 144). The intention is to acknowledge both the wider range of actors (human and non-human) that constitute policy making, as well as the broader array of sites in which policies are formulated and circulated. A key objective in this regard has been a focus on cities as important nodes in international policy circuits (McCann 2011, McCann and Ward 2011, Jacobs 2012).

Much has been written on the emergence of policy mobility and its distinctiveness to political science work on policy transfer (for overviews see Benson and Jordan 2011, McCann and Ward 2012, Stone 2012). It is not my intention to provide a comprehensive analysis of this debate here, but rather to focus on policy mobility and policy transfer scholars’ recognition of, and attentiveness to, the issue of policy failure. For, despite the upswell of activity and

new interdisciplinary engagement in policy transfer scholarship, there remains - as others have noted (Clarke 2012, Jacobs 2012, Webber 2015) - a problem at its empirical core, namely a preponderance of successful best practice case studies. In other words, policy transfer and mobility research is overwhelmingly about policies that do work and are 'present' - publically promoted and discussed as successes - ranging from urban regeneration in Bilbao and Barcelona (González 2011), to sustainability in Vancouver (McCann 2008). Scholarship is in effect therefore missing a large part of the empirical picture. Instances of non-transfer because of policy failure, as well as explorations of how and why negative policy lessons are framed as such, and circulate as examples of failure, are issues that have been empirically neglected (for a notable exceptions see Robertson 1991, Müller 2015, Webber 2015).

Analysis is therefore based on primary empirical investigation undertaken during 2015 of a policy in the State of Victoria, Australia, which is widely regarded as a policy failure, and includes: twenty-five expert interviews across Australian government (state and federal), utility and metering companies, industry bodies, nongovernmental and standards organisations; attendance at several specialist meetings and workshops; and an extensive policy literature review of Australian and international smart metering and smart grid documents and websites.

The paper is structured as follows: first, a brief background on the development of smart metering policy in Australia and the State of Victoria is provided; second, a review of policy transfer and policy mobility scholarship considers how policy failure has been conceptualised to date and evaluates the potential for STS-grounded theories such as assemblage to provide a means to better understand policy failure; third, key findings from the empirical case of the

AMI Program are explored including how it was framed as a policy failure, and its domestic and (limited) international mobility. Fourth, in conclusion, these findings are summarised and their implications discussed.

## **2. Background – smart electricity metering in Australia**

Smart meters are a new type of digital communications-enabled electricity meter that produce detailed, fine-grained data on energy use. This data can be transmitted to electronic devices within the home or business that display consumption in real-time. Smart meters can be used to measure water and gas, but it is electricity meters that are most common, and that are the focus of this paper. Smart meters are also called ‘advanced meters’, as in the case of Victoria. Advanced or smart meters are subtly different to interval meters - a forerunner of smart meters with similar functionality but lacking two-way communications - and distinctly different from traditional ‘accumulation’ or ‘spinning disc’ meters, which measure consumption using a physical method: a rotating disc.

Although smart metering policy in Australia has largely been developed at a national, federal level through the Council of Australian Governments (COAG) Energy Council and the organisations governing the National Electricity Market (NEM), under the Australian federal system of government the individual states and territories have considerable discretion and their own policy-making powers. And so it is that the State of Victoria was pursuing its own mandatory smart metering installation program – the AMI – in advance of a 2007 COAG agreement on a national approach. The Victorian AMI Program was given state government approval in 2006 and commenced in 2009, in anticipation at the time of the rest of the NEM following suit. Discussions around changes to electricity metering in Victoria actually started several years before: there was agreement in 2004 on a program to replace traditional meters

with interval meters on a gradual (non-mandatory) basis (ESC 2004). But, after a number of studies and further consideration (see CRA International and Impaq 2005), it was decided to modify the interval metering programme to a ‘smart’ or advanced metering programme, i.e. to install ‘next generation’ meters incorporating two-way communications, and to do this more quickly, with a mandatory ‘accelerated roll-out’ (DPI 2007: 7). The reasons given by the Victorian Government for adopting such an approach were to enhance retail competition and provide better functionality from the meters through employing an efficient and timely installation method (DPI 2007).

In the period 2009 to 2013 2.8 million advanced meters were installed on this basis in 93% of homes and small businesses across Victoria (VAGO 2015). This involved removing the old ‘spinning disc’ meter in each property and replacing it with a digital ‘advanced’ meter. The Program was managed by the distribution and transmission utilities (i.e. those responsible for the electricity ‘poles and wires’), and overseen by government. Customers were charged directly for the new meters, with Victorian households paying on average \$760 extra on their bills because of additional metering charges in the period 2010-2015 (VAGO, 2015: 29). It was anticipated that customers would make equivalent or larger savings through reduction in bills because the meters allow more detailed feedback on electricity use, and facilitate the introduction of new flexible pricing tariffs allowing cheaper consumption at particular times of day (‘time of use’ tariffs). The AMI Program officially finished at the end of 2013, and a rebate was offered to customers if smart meter installation had still not been attempted at their property by the end of June 2014 (VAGO 2015: 29).

It was not long after the start of the AMI Program implementation in 2009 that problems started to emerge. Tensions centred mostly around costs, as the AMI Program was structured

in such a way that any financial risks were borne by customers rather than the utilities or government; moreover, additional costs were ascribed to all households from January 2010, regardless of whether or not they already had a new meter installed (VAGO 2015). Further, there were a number of broader governance concerns raised about the AMI Program, including: the degree of public sector oversight, the exclusion of retailers<sup>1</sup> from decision making, as well as access to smart meter data, and data privacy issues (see Deloitte 2011: 9, VAGO 2015: ix). Public protests and campaign groups emerged such as *Stop Smart Meters Australia* and a dedicated anti-AMI Program political party *People Power Victoria*, with central campaigning issues including negative health effects because of radiofrequency emissions from wireless digital meters, rising bills, and privacy concerns (People Power Victoria 2015, SSMA 2015).

Thus, despite initial optimism around the State of Victoria providing a positive ‘best practice’ demonstration of a new electricity metering policy for the rest of Australia to follow (see for example NSMP 2008: 4, Marchment Hill Consulting 2009), the AMI Program emerged instead as a policy failure, such that from 2013 onwards there was a flurry of Australian federal and state government documents explicitly stating that the AMI Program would not be replicated elsewhere (Queensland Department of Energy and Water Supply 2013, NSW Minister for Resources and Energy 2014, Department of State Growth 2015). Thus the policy failure of the AMI contributed to a change of policy at the national level: Australia’s smart metering policy changed quite significantly in the period 2013-15, with a much less stringent and more open-ended policy of voluntary, competitive or ‘market-led’ smart metering installation process introduced in the NEM (AEMC 2012, Department of Industry and Science 2015). In essence, the new policy means there is no longer an obligation for smart

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<sup>1</sup> A decision was taken early on by the Victorian state government for the AMI to be implemented by the electricity distribution companies (the companies who run the electricity networks, of which there are five in Victoria), with oversight by the then State Department of Infrastructure.

meters to be installed (AEMC 2015), and indeed several organisations have questioned whether there will be any significant customer uptake (see for example TasNetworks 2015).

### **3. Theorising policy failure**

As noted in introduction, there is an acknowledged shortage of research on the movement of policy that considers negative lesson drawing, learning and policy failure (Jacobs 2012, McCann and Ward 2015, Webber 2015). In this review of existing scholarship the focus is firstly on the small body of work that has been developed on the topic, across political science (policy transfer), and geography and urban studies (policy mobility). Second, STS concepts relating to the fragility of networks and their breakdown are evaluated for the insights they might provide for cases of policy failure. In particular, there is judged to be potential for using the concept of assemblage to conceptualise not just the coherence of assemblages in cases of policy success, but also their fragmentation in cases of policy failure.

#### *Negative lesson drawing and policy failure*

In early political science work on policy transfer, negative lesson drawing and learning from policy failure is in most cases viewed as an oddity: highly distinct from positive, best practice learning and transfer and the travelling of policy solutions, and mostly ignored. Crucially, therefore, negative lesson drawing is not seen for the most part as on a continuum of policy transfer processes, but rather something inherently different - an outlier. For instance, Dolowitz and Marsh (1996: 349, emphasis added) - in answer to the question ‘what is transferred?’ in their review of policy transfer - identify “... seven objects of transfer: policy goals, structure and content; policy instruments or administrative techniques; institutions; ideology; ideas, attitudes and concepts; and *negative lessons*.” It is not clear why negative lessons are listed separately here, and it wrongly implies that they are not related to policy

goals, ideas or instruments. In a similar vein, Rose's (1991: 22) description of different ways of drawing a lesson - copying, emulation, hybridization, synthesis, and inspiration - leaves little room for positioning policy failures, for it is hard to imagine situations where one might emulate, or draw inspiration from, failed policies. Illical and Harrison (2007: 391, emphasis added) reach a similar conclusion about the core overall term 'policy transfer':

"Although Dolowitz and Marsh (1996) allow that "policy transfer" may be positive or negative, *the everyday use of the term transfer implies a positive lesson.*"

This 'bracketing off' of policy failure has, however, been attended to more recently by a number of scholars. From within political science, the concepts of policy transfer and learning have embraced policy failure in a more holistic way, positioning it as part of a continuum with policy success (Bovens and t'Hart 1996, Marsh and McConnell 2010, Howlett 2012). The thrust of analysis in political science scholarship remains, however, focused on learning *within* government in the policy's place of origin, rather than whether and/or how these policy failures might travel further afield. Indeed, the inference is simply that policy failures simply do not move beyond the particular locality in which they were first implemented: they remain geographically contained where they were implemented. There, are, however, some important exceptions. The paper by Illical and Harrison (2007) provides a rare, detailed long-term study case of negative learning about the transfer of endangered species policy between the US and Canada. The US implemented the Endangered Species Act in 1973 and Canada learnt from some of the things that did not go well and a long time later - in 2002 - implemented its own version of the policy. A core finding of this study is the wider context that shaped Canadian policy, as the authors explain:

“The case of endangered species policy in the US and Canada thus offers not only a clear example of the impact of negative lesson-drawing, but also suggests the importance of the interaction of lesson-drawing, interests, and institutions.... *the negative lessons of the US Endangered Species Act were readily incorporated because their “fit” with the institutional setting and prevailing balance of interests.*” (Illical and Harrison 2007: 390, emphasis added).

This finding echoes early analysis by Robertson (1991) in his research on decision making across several policy sectors in the US including mandatory plant closures, labour market and income support. Robertson provides an interesting account of how positive and negative lesson drawing from elsewhere is more or less likely to occur at different stages of the policy process: with positive lesson drawing tending to take place at the early agenda-setting stage, and negative lesson drawing during intense decision-making on implementation. Robertson makes a strong argument for attending to the politics of policy transfer, noting how "Policy lessons from abroad often are put forward as politically neutral truths. Beneath this superficial impartiality, political adversaries... are using such lessons as political weapons." (Robertson 1991: 55).

Such attentiveness to the social construction of policy successes and failures and the wider context in which policies flow are core interests of a burgeoning ‘new wave’ of interdisciplinary scholarship on policy transfer - policy mobility - led principally by geographers and urban studies scholars. Jamie Peck, a key policy mobility scholar, for example reflects how:

“...the field of policy transfer... is saturated by power relations. These intensely contested and deeply constitutive contexts... shape what is seen, and what *counts*, in terms of policy innovations, preferred models, and best practices. They also frame those narratives of ‘policy failure’ that establish the premises and preconditions for policy experimentation, and which variously animate and constrain the search for new institutional fixes.” (Peck 2011: 791);

and McCann and Ward (2015: 1) explicitly identify success and failure as part of a continuum, noting how:

“Neither success nor failure is absolute. One does not make sense without the other. Rather, success and failure are relationally constituted in politics and in policy-making. Studies of urban policy mobilities should, then, reflect critically on approaches to success/failure and their relational constitution even as they simultaneously study the effects of their empirical separation and reification in policy-making.”

Jacobs (2012) builds on McCann and the work of other policy mobility scholars to likewise advocate approaches that consider “Sites of failure, absence and mutation [as] significant empirical instances of differentiation.” (2012: 419) drawing attention also to the methodological bias of policy mobility scholarship which is “... fixated on policy presences, following what has already arrived and formed” (2012: 418). Clarke (2012) taking a distinctive historical approach, similarly makes a considered and thoughtful call for scholarship on policy mobility to be attentive to the wider dynamics of policy change and decision making, including an absence of policy flows. Drawing on the work of the urban historian Saunier, Clarke’s criticism of policy mobility scholarship is also methodological. He argues that the ‘flow’ methodology advocated by policy scholars both encourages attention towards successful policies, as well as restricts exploration of the wider context

surrounding these flows, whereas Saunier's "... [historical] starting point brings into focus the full breadth of attempts to mobilize urban policy, some of which succeed while others fail. This breadth of view is lacking in studies of contemporary urban policy mobility which 'follow the [successfully mobilized] policy' using 'flow methodologies' (Peck and Theodore, 2010a)" (Clarke 2012: 39). These tensions or 'dualisms' between presence and absence, success and failure, and mobility/immobility have been acknowledged by McCann and Ward (2015: 2, emphasis added) who note that:

"Much of the work in the urban policy mobilities approaches has, almost by definition, emphasized those policies that appear to be 'mobile', where there is evidence of the policy being moved from one location to another.... *The 'other', so to speak, in the literature is the group of policies that do not appear to have travelled, policies that appear to exist in just one location.*"

But, as noted, there remains a lack of clarity about what constitutes this 'other' of immobile policies: whether it be successful but unrecognised policies, or failed ones, or a mix of both, a point returned to below in discussion of assemblages. Further, despite the increasing conceptual recognition of policy failure, policy mobility scholarship has in many ways served to reinforce rather than challenge the empirical dominance of positive best practice cases. Ranging from Temenos and McCann's (2012) case study of Whistler and its implementation of international 'The Natural Step' sustainable development program, to Ward's (2006) study of business improvement districts, the majority of empirical cases in the policy mobility field concern the movement of policy successes. Peck, for example, defines contemporary 'fast-policy' regimes as: "... characterised by the pragmatic borrowing of 'policies that work'... by iterative constructions of best practice" (Peck 2011: 773). There is a tension, therefore, between an increasing conceptual recognition by policy mobility

scholars of policy failure and yet continuing empirical attention on the movement of best practice policies. There are, however, some important exceptions. For example, Webber's research on the mobility of World Bank climate adaptation initiatives between Kiribati and the Solomon Islands attends to "... [the] multiple failures and stoppages... failure in project outcomes, failure to mobilize, failure to implement in replication sites, and, most importantly, failure that becomes success through iterative extraction and interpretive processes for extra-local learning." (2015: 29). Webber thus shows how, despite World Bank initiatives in Kiribati not working well (and indeed the second program 'KAP-II' being judged unsatisfactory by the World Bank's own mid-term review process), the Kiribati program was nonetheless promoted as a success in several World Bank reports, and used as a model elsewhere. Webber stresses the importance of "Attending to the differences between what is mobilized in rhetoric and in practice..." (2015: 36) - hence drawing an important distinction between the discourses used by actors involved in the movement of policies, and the practices of implementation. This point is echoed by Muller (2015) in his analysis of environmental policy mobility using the case of the 2014 Olympic Games in Sochi, Russia. Muller identified in his research on Sochi the problematic and incomplete implementation of practices and approaches used in the previous Vancouver Winter Olympics, noting how "...where there is transportation, there is also immobility: certain people and things stay put, they escape the attempt to move them or move only partially..." (2015: 195). But whilst the cases discussed by Webber and Muller are important contributions, they are not, however, at their core about the movement of failed policies: Webber's climate adaptation case is about the movement of a policy that failed in parts, but nonetheless was discursively framed and travelled as a success. Muller's case is about the import of a policy success (from the Winter Olympics in Vancouver) that subsequently mostly failed. What the case of the Victorian AMI Program, analysed below, contributes, therefore, is a detailed empirical case of the framing

and movement (or not) of a policy failure.

### *The unraveling of assemblages*

The substance of policies is an interest of policy mobility scholars, who have drawn on the concept of assemblage to examine the diverse constitution of successful policies (see for example McCann 2011). The intention of the notion of assemblage is to acknowledge both the wider range of actors (human and non-human) that constitute policy making, as well as the broader array of (non-government, non-nation state) locations in which policies are formulated, evolve and circulate. An assemblage approach, as applied to the study of policy movement, is thus “...characterized by a concern for *the actors, practices, and representations* that affect the (re)production, adoption and travel of policies, and the *best practice models* across space and time.” (Temenos and McCann 2012: 345, emphasis added). As this definition demonstrates, to date the application of the concept of assemblage within policy mobility scholarship has been largely directed at the making and holding together of policy *successes*. Further, the interpretation of the concept of assemblage within policy mobilities scholarship has tended to be rather less focused on the materiality of assemblages compared with its application in other fields (e.g economic sociology and STS – see Callon 2007). Instead, attention has been mostly directed at how assemblages work to draw together different elements of policies from disparate locales (see Allen and Cochrane 2007, McCann 2011). It is suggested, however, that the rich heritage of STS scholarship on heterogeneous (human and non-human) networks - variously termed actor-networks, sociotechnical systems, and *agencement*, as well as assemblages (see Callon 1986, Law and Hassard 1999, Graham and Marvin 2001) - could be more fully embraced. For this wider body of work attends closely to the fragility, breakdown and failure of such networks: from Callon’s (1986) classic

case of scallop fishing in France, to examples in agriculture (Higgins and Kitto 2004), housing (Lovell and Smith 2010) and medicine (Singleton and Michael 1993). A key concept here is that of translation – a process by which previously disparate things and people are brought together into a coherent network – an ‘actor-network’ – that is able to act in a unified way. Callon and other STS scholars have noted the amount of work involved in translation, as well as the ongoing effort required to sustain stability (Callon 1986, Singleton and Michael 1993, Murdoch 1997). Actor-networks are inherently prone to fragmentation and unravelling, as Callon demonstrates in his case of scallop conservation in France, which is in essence a case of failure: the scallop larvae fail to thrive in new specially designed collector units, and they are harvested too early by the fishermen (Callon 1986). As Callon describes “...translation is a process, never a completed accomplishment, and it may (as in the empirical case considered) fail” (1986: 196). Ideas about the tendency of sociotechnical networks to disintegrate have also been applied to utility infrastructures. For example, Graham and Marvin in their book *Splintering Urbanism* describe how "Infrastructure networks, are, in short, precarious achievements." (2001: 182). It is thus suggested that casting the assemblage net slightly wider to capture this STS scholarship on the breakdown of sociotechnical networks helps better recognise and conceptualise the movement of policy failures. For, as the empirical analysis below explores, in the case of the AMI Program it is fragments of the original assemblage that have splintered off and been mobilised, rather than a coherent assemblage.

#### **4.The AMI Program: its framing as a policy failure, and its mobility**

##### *Framing the AMI Program as a policy failure*

It is outlined above in introduction the ways in which the AMI Program did not proceed as

planned, including problems of cost overruns and therefore higher bills for customers, concerns about health and privacy, and also around the governance of the Program. In 2015 the Victorian Auditor-General published its second highly critical report on the AMI Program documenting these failures (VAGO 2015); following on from 2009 report, which brought to light significant concerns about the AMI Program even before it started (VAGO 2009). Problems were also actively debated within the public domain, with extensive media coverage (e.g. 24 news articles on the AMI in the Melbourne based newspaper *The Age* in the period 2009-13), and a number of active non-governmental organisations and campaign groups formed to protest against the AMI Program, including a new political party (People Power Victoria 2015, SSMA 2015).

But it is important to recognize that the context has changed over time; that shifts in the wider technical and political landscape have played a role in the framing of the AMI Program as a failure. For instance, since the decision was made in 2006 in Victoria to go ahead with the AMI Program there have been new innovations in digital metering technology. The technological capabilities of smart meters have changed significantly, and this is partly why the implementation of the AMI Program was problematic, because of the degree of technical uncertainty and flux within the new innovative sector of digital metering. As Adrian Clark, Head of Smart Metering Australia at Landis+Gyr, a large international metering company, explained: "... the Victorian problems emanated from decisions taken almost 10 years ago, and since that time the technology has 'leapfrogged' " (cited in MacDonald-Smith 2015). Note that an attempt is being made here to temporally limit the failure as a technical one: not all advanced meter programs are problematic failures, but rather the type of meters available several years ago had limitations.

A key change in the political context in the State of Victoria has been the election of a new state government in 2010, with a shift from Labour to a Coalition (Liberal/National) government. After election the new Coalition government requested a review of the AMI Program, raising the possibility that it would halt its implementation, or significantly alter it (see Victorian State Government 2015). However, the new government did decide, rather reluctantly, to proceed, albeit with notable modifications including introducing optional flexible pricing, establishing a Ministerial Advisory Council, and subsidising in-home energy displays (see Victorian State Government 2015). The new Energy Minister explained the decision as follows:

“...analysis shows that if you were looking at it from a blank sheet of paper you probably wouldn't go down this [AMI Program] path. There are actually more detriments to consumers, or costs to consumers as the result of the project as a whole, compared to the benefits. *But we're not starting with a blank sheet of paper. We're starting with the mess we've inherited from the Labor government.*”(Victorian Energy Minister Michael O'Brien 2011).

Thus the change in state government in 2010 was highly significant in the framing of the AMI Program as a policy failure – it was a political manoeuvre (Bovens and t'Hart 1996, Marsh and McConnell 2010).

In assessing the changing context it is also important to recognise policy flows (new knowledge, stories, learning) from elsewhere. For of course it is not only the negative example of AMI Program that has been circulating in Australia, but alongside it a host of other examples of advanced metering policy programs from elsewhere, for Australia is

positioned within international policy circuits in relation to advanced or smart metering (Lovell 2016). There are multiple connections and intersections between these circulating ‘best practice’ international smart metering programmes and the AMI Program. Other policy examples have typically been successful best practice ones, and these have likewise had an important influence on the direction of policy change in Australia towards a voluntary competitive or market-led mode of new meter implementation. For instance, New Zealand - and the market-led method for implementing smart metering it adopted - was frequently cited by interviewees as a counterbalance to the negative case of Victoria, as one interviewee explained:

“New Zealand is largely seen as a positive example and Victoria as a negative one.”  
(Australian State Government Manager, April 2015).

Thus illustrating the benefit of analysing policy failures alongside the circulation of other more positive policy examples.

### *The mobility of the AMI Program*

A key finding is that the AMI Program has indeed been mobile – it has travelled despite (or indeed because of) being an example of worst practice. This finding runs counter to much of existing scholarship, which, as discussed above – although ambiguous – mostly implies that policy failures do not move. Most obviously this mobility is evident at a domestic level. In a number of Australian state government policy documents there are explicit statements explaining a shift in smart metering policy away from a mandatory method of implementation because of the AMI Program (see Table One below). Thus, a related finding is that its movement has not principally been one of urban mobility – travelling city-to-city

within Australia – but rather a movement via state governments and the organisations governing the NEM. This is important because the majority of policy mobility studies to date concern inter-urban mobility (McFarlane 2011, Jacobs 2012, Prince 2014). The movement of the AMI is a finding that resonates more strongly with the political science notion of policy transfer, wherein policy transfer is conceptualised as taking place between governments, internationally and between regional states (Dolowitz and Marsh 1996, Marsh and Sharman 2009).

[insert Table One about here]

But there is much less evidence of the AMI travelling internationally, beyond Australia. Whilst empirically it is of course more difficult to account for the absence of policy movement, rather than its presence (McCann 2011, Jacobs 2012), a review of international smart grid and smart metering reports, conference programmes and websites has yielded very little reference to, or discussion of, the Victorian AMI Program. Searches of policy documents, reports and conferences papers generated by the two main international smart grid networks - the International Smart Grid Action Network (ISGAN) and the Global Smart Grid Federation (GSGF) - reveal just two mentions since their foundation in 2010: one in a presentation at the 6<sup>th</sup> ISGAN International Workshop in Johannesburg, which describes the AMI Program as “... mandated and expensive” (AER 2015) and second within the GSGF 2012 Annual Report, which again describes the AMI Program in negative terms: “The State of Victoria commenced a mandatory roll-out of smart metering infrastructure... consumer reaction to the project was extremely negative” (GSGF 2012: 15). Further, the AMI Program did not form one of the “...two illustrative smart grid projects” profiled in the GSGF’s dedicated chapter on Australia, with two other more overtly successful cases instead

discussed: *Smart Grid Smart City* and Essential Energy's *Intelligent Network Communities Project* (GSGF 2012: 16). The European Technology Platform for Smart Grids (2005+) has no reference to the AMI Program in its wealth of online documents and presentation slides; and nor was it listed under the international projects of the main US smart grid project database (see Smart Grid ICH 2015).

However, there is one exception internationally, which is a detailed review of the AMI Program undertaken by an organisation called the New Zealand (NZ) Smart Grid Forum - a public-private partnership of the NZ Ministry of Business, Innovation and Employment and the NZ Electricity Networks Association (Moore 2015). New Zealand has implemented a quite different market led (voluntary) method for transitioning to smart meters, and this appears to be the rationale for conducting the comparison with Victoria, as it is noted that "Both Jurisdictions have seen similar technology smart meters installed at the majority of electricity consumers' premises over broadly similar timeframes" (2015: 4). In keeping with other international analyses, the New Zealand report clearly positions the AMI as a policy failure, remarking that "The Victoria Smart Meter Program has been widely reviewed and criticised" (2015: 3) and also that "...the AEMC [Australian Energy Market Commission] is working on rule changes to enable contestable metering service, partly as a result of the Victoria experience" (2015: 8). It does, however - in contrast to other international analyses - provide fine-grained analysis of how the AMI Program was decided upon and implemented.

#### *What has circulated and been mobilised?*

The AMI has predominately travelled discursively – as a *story* of policy failure. There has not, in other words, been much transfer of details about what the program entailed, nor

elements that did work well (e.g. the high level of penetration of new smart meters achieved, at 93% (VAGO 2015: 15)) – albeit with some exceptions, for instance in the NZ Smart Grid Forum analysis. So there has been mobility, but what has travelled is partial: the AMI has been simplified through its active construction as a story of policy failure (see Table One). A recognition that it is the *discourse* of policy failure which has had an effect in influencing the rest of Australia’s policy decision making is encapsulated in the comments of an interviewee close to the decision making processes in Victoria and the NEM:

“We've now moved to the voluntary [meter] rollout model... and it's a bit of an elephant in the room, but it's not particularly controversial to say that it is a pretty inefficient way to rollout smart meters because it results in dribs and drabs of meters... and doesn't get to a position of saturation quickly enough to really capitalise on the benefits that smart meters have... *The real underlying driver behind that change of reform is that no Energy Minister now wants to be responsible for saying, 'We're going to do the same thing Victoria did.'*” (Sustainability Consultant, May 2015).

The crafting and circulation of policy discourse and ‘storylines’ has been identified by other scholars working on policy transfer, learning and mobility (Robertson 1991, Bulkeley 2006, Clarke 2012), and draws on a rich tradition of political science and interdisciplinary scholarship researching the power of discourse to effect (or hinder) policy change (Hajer 1995, Dryzek 1997, Bulkeley 2000). Clarke (2012: 31), for example, identifies a key insight from Saunier's work regarding rhetoric and discourse as follows: "...urban policy mobility was used rhetorically from the very beginning of the transnational municipal movement... Stories about other cities were used by politicians and municipal officers to subvert – or to strengthen – the local status quo." Also Marsh and McConnell (2010: 570, citing Bovens and

t'Hart 1996, pp10) note how "Whenever a policy fiasco is 'discovered', many different kinds of people engage in the meaning making that produces it." But, in contrast to the circulation of best practice policies - which tend to be rich in detail and allow for mutation, experimentation and learning from them - the circulation of the story of the AMI Program as a policy failure appears instead to have largely closed down the possibility of learning. An interviewee explains in rather blunt terms that:

"..the experience in Victoria has laid to waste any further views of a mandated roll-out in the NEM, at least within a generation." (Electricity Market Project Officer, April 2015);

whilst another state government policy officer also recognises the inhibiting effect on learning of the highly politicised construction of the AMI as a policy failure, suggesting, however, that his own state jurisdiction is perhaps more receptive to policy learning:

"We feel that [our state] community is pretty mature and that we wouldn't have some of the ridiculous backlash, sort of *Today Tonight* type backlash, that Victoria has had. The main issue for us is... that we can't make a compelling economic business case for smart meters at this stage. The benefits aren't firm enough." (State government manager, May 2015).

Further, because it has travelled *discursively*, the AMI program does not appear to have mutated - i.e. changed as it has travelled and moved elsewhere - as suggested by existing empirical work on (best practice) policy learning and mobility (Bulkeley 2006, Peck and Theodore 2010, Prince 2012). There is a notable consistency in how the AMI Program has been interpreted within Australia, as evidenced by the quotes in Table One above. This is perhaps quite simply because it has not been implemented elsewhere (and therefore altered or

mutated in the process), because it is an example of policy failure. This immutability could be a more general finding shared by other instances of the movement of policy failures, although Illical and Harrison (2007) did find mutation over a longer timeframe, between countries. Indeed, looking internationally it might be that there is more scope for learning from the AMI Program, because there is distance from the domestic political context. For example, the NZ Smart Grid Forum report on the AMI Program acknowledges the particular setting of decision making in Victoria:

“There are different ways to mandate and run a smart meter roll out; *some of the issues associated with the Victorian programme may not apply to other mandated programmes* but provide a useful comparison to the issues identified with market led investments in smart metering in New Zealand” (Moore 2015: 12).

Thereby alluding to the unique confluence of place-specific issues associated with the AMI Program, which are seen as potentially separate – or able to be dissociated from – other mandated metering programs. In this way certain elements of the AMI Program are rendered immobile, in what could be conceptualized as an active, intentional fragmentation of the AMI Program policy assemblage.

## **Summary and Conclusions**

The arrival of a new set of ideas from geography and urban studies on policy mobility has productively reinvigorated existing political science scholarship on policy transfer. However, there remains a bias running across both sets of scholarship, namely a focus on internationally-mobile best practice, successful policies. Case studies of policy failure and their movement are rare. This paper responds to recent calls to empirically address this gap

(Jacobs 2012, McCann and Ward 2015), providing a detailed case study of policy failure: the implementation of smart or ‘advanced’ metering in the State of Victoria, Australia. Evidence regarding the mobility of the AMI Program indicates: first, that policy failures can be mobile; and, second, that in this case of policy failure there has been relatively constrained mobility, with primarily domestic circulation. The international movement of policies concentrated on by policy mobility and transfer scholarship - focused largely on policy successes – is much less evident with regard to the AMI Program.

The concept of policy mobility positions a range of non-state actors as closely involved in the making of policy and its movement. It also introduces the idea that policies change or ‘mutate’ as they travel and are implemented, as well as bringing new conceptual insights, including the notion of assemblage. To date, however, assemblage has been deployed primarily to describe and better understand the holding together or coherence of multiple elements of best practice policies, drawn from different locales. It is proposed, however, that greater attention to its broad usage within STS (through work on actor-networks, sociotechnical systems and so on) to explain instances of disintegration and breakdown is useful in thinking about cases of policy failure. For what is mobile in instances of policy failure is not a coherent ‘actor’ or heterogeneous network – designed to be replicated and comprising multiple integrated components (institutions, legislation, policy instruments etc) - but rather discursive fragments of an assemblage that has broken down. Use of a more STS-orientated conceptualisation of assemblage lends itself to a number of insights with regard to the empirical case in hand: first, that policy failure may travel differently to policy success because there is not a coherent assemblage (a successful policy, or ‘best practice model’) to mobilise in such cases; and, second, in helping us to better understand what remains immobile in cases of policy failure - in the case of the AMI Program the fragments that have

been mobilised are for the most part selective and highly politicised discursive framings of what went wrong, and - as noted - other more positive aspects of the original assemblage are left out of this story and remain immobile, such as the high installation rate, and the wealth of new energy data that is now being generated in Victoria. Further, what remains immobile internationally may be domestic policy processes and politics specific to place of origin of the policy – there is tentative evidence of this in the detailed New Zealand review of the AMI, wherein the local particularities of the AMI Program are acknowledged, but judged to not necessarily apply to other mandated metering programs implemented elsewhere (Moore 2015: 12).

More broadly, an understanding of how and why the AMI has been framed as a policy failure and has been mobilised within Australia requires attention to shifts in the wider context, including a change in state government, international policy flows, and technological innovation. In other words, the framing of the AMI Program as a policy failure has emerged from, and resonated because of, changes in Australian domestic politics and policy, international policy, and smart metering technology since the Program was first approved in 2006. Thus, for example, the apparently successful implementation of a voluntary market model for installing smart meters in New Zealand has been influential in that the existence of an alternative policy solution has gone some way to allow – and encourage – the explicit naming of the AMI Program as a failure. Detailed investigation of the empirical case has been important in identifying these nuances. Whilst there are of course limitations in drawing wider conclusions from this single case, the findings indicate a number of issues that could be further explored in relation to the mobility or geographies of policy failure, including: what is mobile in these cases; the context in which the policy failure is framed as such; and the degree to which learning from policy failures is inhibited, i.e. by the discursive

story of failure circulating, rather than detailed analysis of what went wrong and how it could be rectified. Other cases of policy failure could usefully research the extent to which these findings are likely to be generalised. In particular, the differential geographies of policy failure and the breakdown and fragmentation of policy assemblages are two areas where there is felt to be merit in further analysis, discussion and conceptual refinement, including through drawing further on insights from STS scholarship about the fragility and unravelling of sociotechnical networks.

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Examples of policy documents referencing the AMI Program:

“Based on the Victorian experience, the Queensland Government has ruled out a mandated rollout of advanced meters in Queensland and will support the customer-driven approach.” [Queensland Government - Department of Energy and Water Supply (2013) *The 30-year electricity strategy Discussion paper: Powering Queensland's future*, pp12]

“Not only were Victorian customers not given a choice of meters, they were also charged the upfront cost of the meter and its installation, a decision which is still costing them. The [NSW] Government has listened to customers and that is why ultimately customers will decide what they want and when they want it.” [NSW Minister for Resources and Energy Anthony Roberts, *Media Release - NSW GETS SMART ABOUT METERS*, 28 October 2014].

“The Government will not initiate a mandated roll-out of smart meters (such as occurred in Victoria). The government’s position is that any take up of smart meters must be consumer-led, where consumers may choose to have a smart meter in order to enable their preferred retail product.” [Tasmanian Department of State Growth, 2015, pp20]

Expert interviewees insights about the role of the AMI Program on policy decision making within Australia:

“...in Victoria they had the mandatory roll-out of electricity smart meters, but I doubt that’s going to be repeated in any other states” [Senior Policy Officer, Federal Government Institute, April 2015].

“So the national direction of this... is all driven from the national forum of energy ministers, the COAG Energy Council. Seeing the negative reaction to [the AMI]... they started to shift their thinking on how that would be done from a mandated rollout to a market-led rollout.” [Senior Policy Officer, State Government, April 2015]

“..the experience in Victoria has laid to waste any further views of a mandated roll-out in the NEM, at least within a generation.” [Manager, National Electricity Organisation, April 2015]

“... my understanding is that the political support for smart meters just whittled and whittled away until by about 2011 or 2012 ... the Victorian experience was seen as extremely expensive with very limited and speculative benefits. I remember a senior Victorian government official saying to me ‘Victoria got on the smart meter bus, we looked around and where is everyone?’... Victoria took the lead and then everyone bailed out on them.” [Senior Policy Officer, State Government, May 2015]

“... we learnt from a negative perspective what not to do, I guess, from the meter rollout in Victoria” [Director, Smart Grid advocacy organisation, May 2015]

Table One – Extracts from key policy documents and interviews demonstrating the effect of the AMI Program on policy decision-making