

# The promise of smart grids



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# Anticipation of smart grids a key feature of policy discourse



# What do smart grids promise?

**A lot: social, economic and environmental policy solutions**

“Smart grids represent the cutting edge of energy efficient technologies, applied in energy production, distribution and householder use, a frontier the Australian Government is committed to exploring quickly and strategically as we move to a low-carbon future.” Australian Government Minister for the Environment, Heritage and the Arts (2009: 4)

'The optimal deployment of smart grids holds significant potential for the management of many of the challenges confronting the electricity supply chain in Australia.' (Lazar and MacKenzie 2012: 1)



# A shattered promise?

“Why are you doing a research project on smart grids? No-one talks about smart grids any more. If I were you I would research something else.” (Interview, Energy Consultant, April 2015)

“We don’t talk about smart grids at all now really....it all seemed a little bit gimmicky, it seemed like a marketing idea rather than a wholesale change in mindset. And I think that was kind of born out a little bit when we observed the challenge of ..you know installing the widget is not everything, you also have to use it to some purpose.” (Interview, Californian Regulator, March 2016)

# Structure

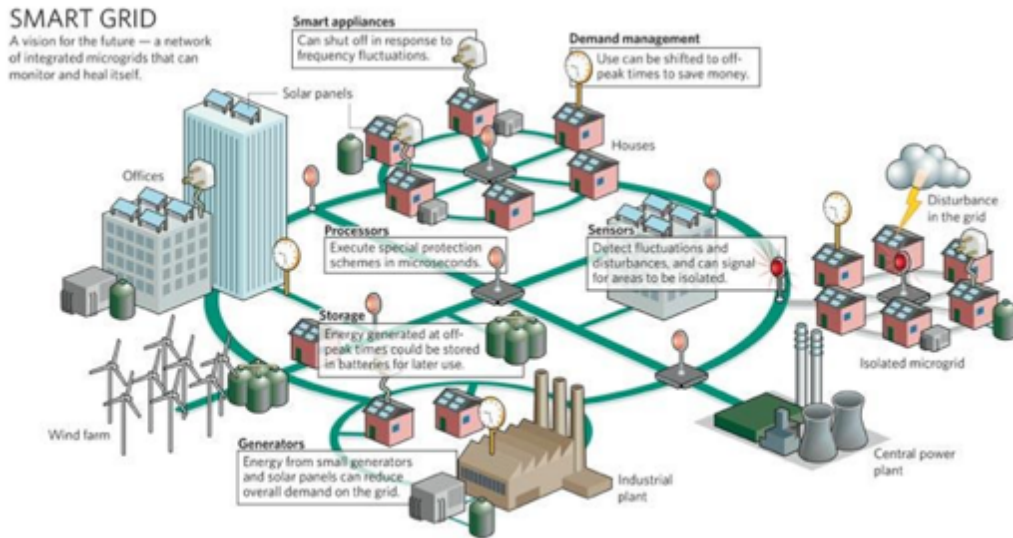
## 1. Conceptualising smart grids

## 2. Australian smart grid programs: *Smart Grid Smart City and the State of Victoria* Advanced Metering Infrastructure Program

## 3. Conclusions: policy retreat and the role of technology

# **1.CONCEPTUALISING SMART GRIDS**

# Theorisation of smart grids: themes



## Governmentality

- (Bulkeley et al 2016) smart grids as a political rationality
- (Luque-Ayala and Marvin, 2016) operationalisation of infrastructural flows
- (Gabrys 2014:32) The promise of smart grids “..the smart city is an ever-elusive project to be realized.”

## Focus on end consumers/households

## Private sector power, motives and interests

- (Viitanen & Kingston 2014: 804) “smart cities can be understood as marketplaces for technology products and services”

## Smart grids as an urban phenomena

# Governmentality

“The analysis of government is concerned with thought as it becomes linked to and is embedded in technical means for the shaping and reshaping of conduct and in practices and institutions. *Thus to analyse mentalities of government is to analyse thought made practical and technical*” (Dean, 1999 p18, emphasis added)

techniques and technologies of government defined as “The diverse and heterogeneous means, mechanisms and instruments *through which governing is accomplished.*” (Dean, 1999, p212, emphasis added)

- It is generally assumed that technologies work to support government programs, to *accomplish governance*.
- But growing evidence points to smart grid technologies failing to support the optimistic discourse about smart grids (the ‘promise’)
  - **Will this, or has this already, undermined support for smart grids?**



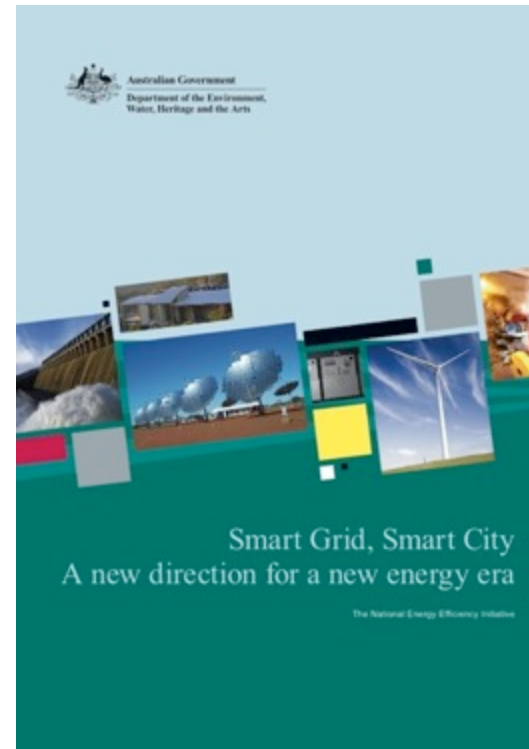
## **2.AUSTRALIAN SMART GRID PROGRAMS**

# What has been implemented in Australia?

**Two large smart grid programs:**

***1. Smart Grid Smart City***

**2. Victorian Advanced Metering Infrastructure Program (AMI)**



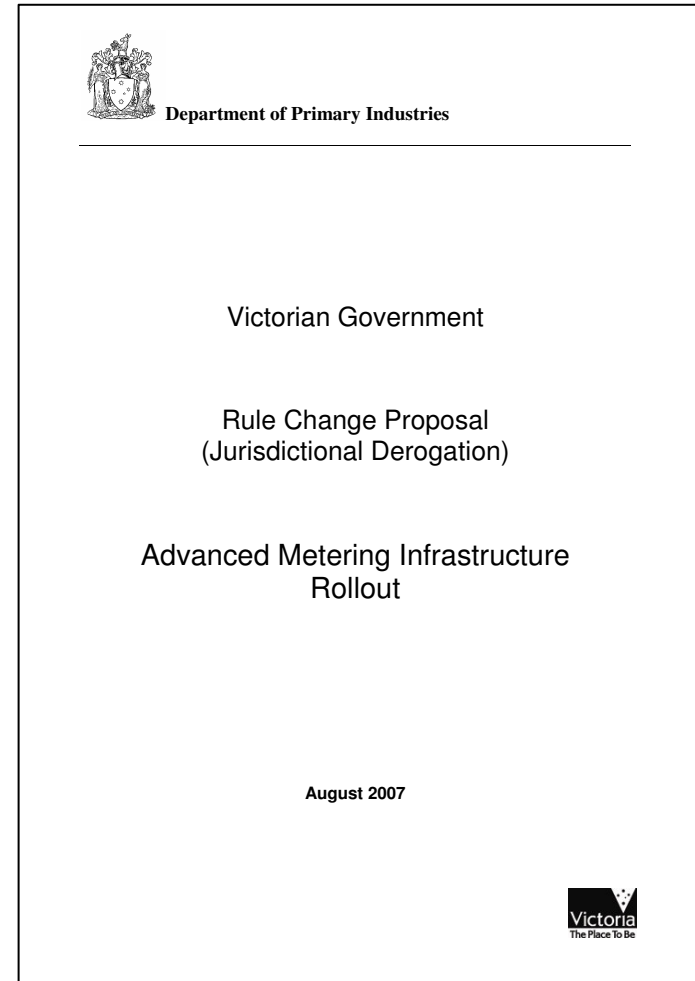
# 1. The State of Victoria Advanced Metering Infrastructure (AMI) Program



# The Victorian AMI: the promise

*Pre-installation optimism – mid-2000s*

“Customers will benefit from the enhanced competition in the retail electricity market associated with the timely and efficient rollout of AMI.” (DPI 2007, p16)



# The Victorian AMI: post implementation

“The reality of the smart meter rollout is that the State approved a program, many of the costs of which it could not directly control, nor drive many of the benefits ascribed to it... Despite improvements to customer education... market research conducted in early 2014 found that two-thirds of Victorians did not understand what the benefits provided through smart meters are, and many are still unaware of their ability to help minimise energy bills” (Victorian Auditor General, 2015: viii)





## Stop Smart Meters Australia

*Fighting for your financial & physical health, privacy, and safety in Australia*



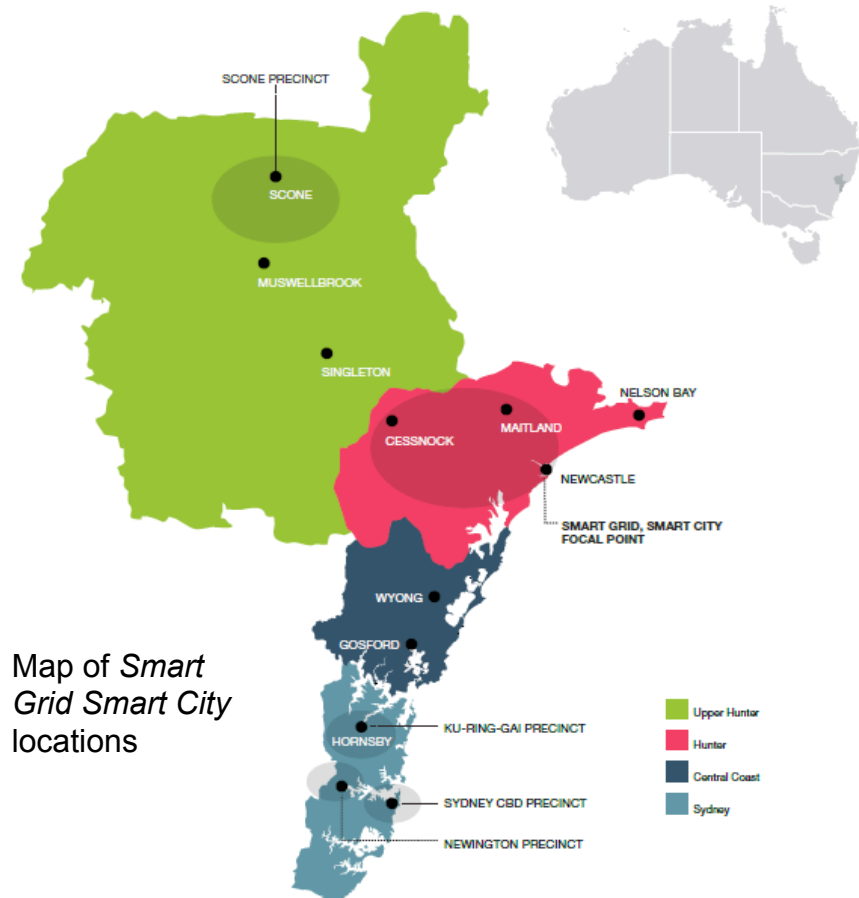
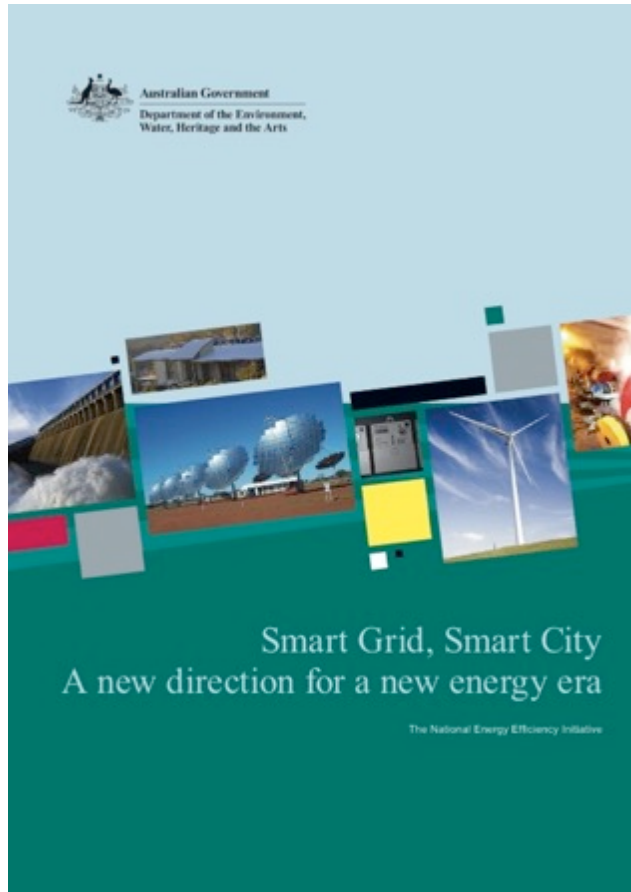
**DO NOT FIT A  
SMART METER**



<http://www.peoplepowervictoria.org.au/home>

<http://stopsmartmeters.com.au/>

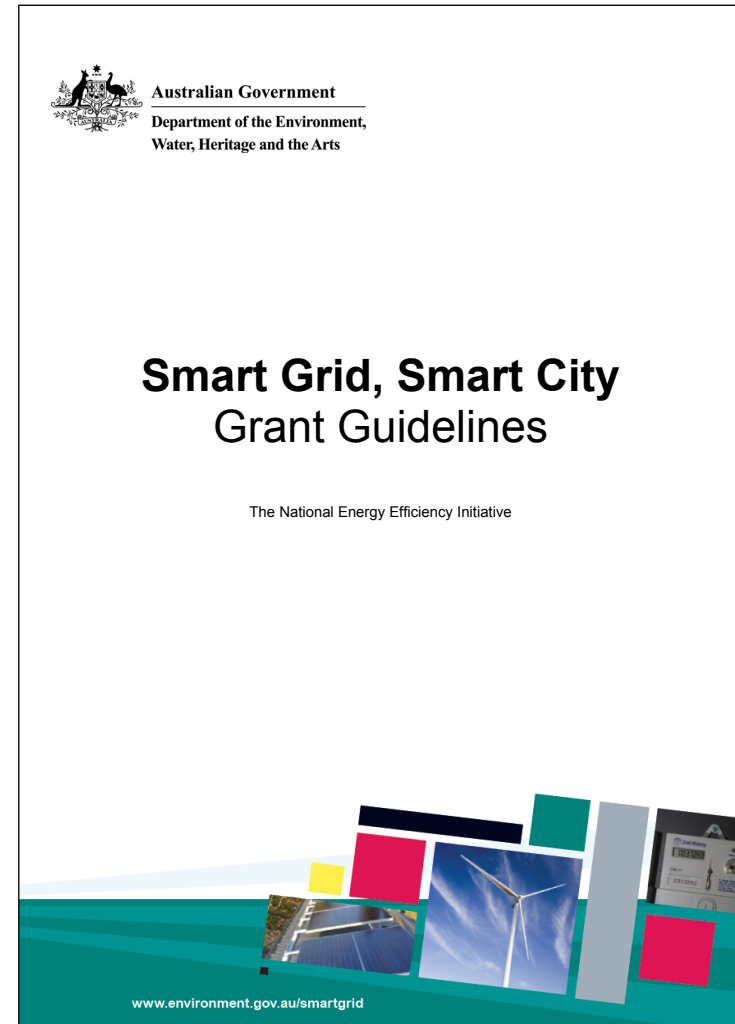
## 2. Smart Grid Smart City



source: AEFI (2014) *Smart Grid, Smart City: Shaping Australia's Energy Future National Cost Benefit Assessment*: 16

# SGSC: the promise

'The new *National Energy Efficiency Initiative: Smart Grid, Smart City* will use 21st century technology to assist Australia's transition to a low carbon economy by encouraging a smarter and more efficient electricity network.' (2009: 3).

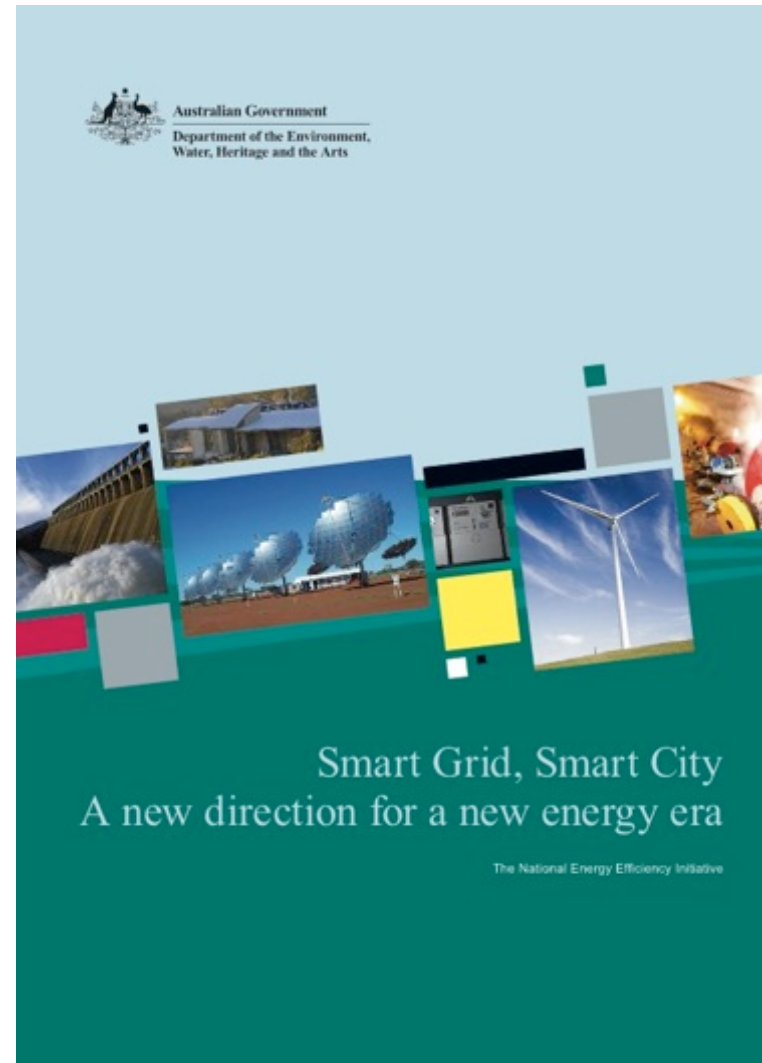




# SGSC: the promise

7 objectives for *Smart Grid, Smart City* (2009: 14):

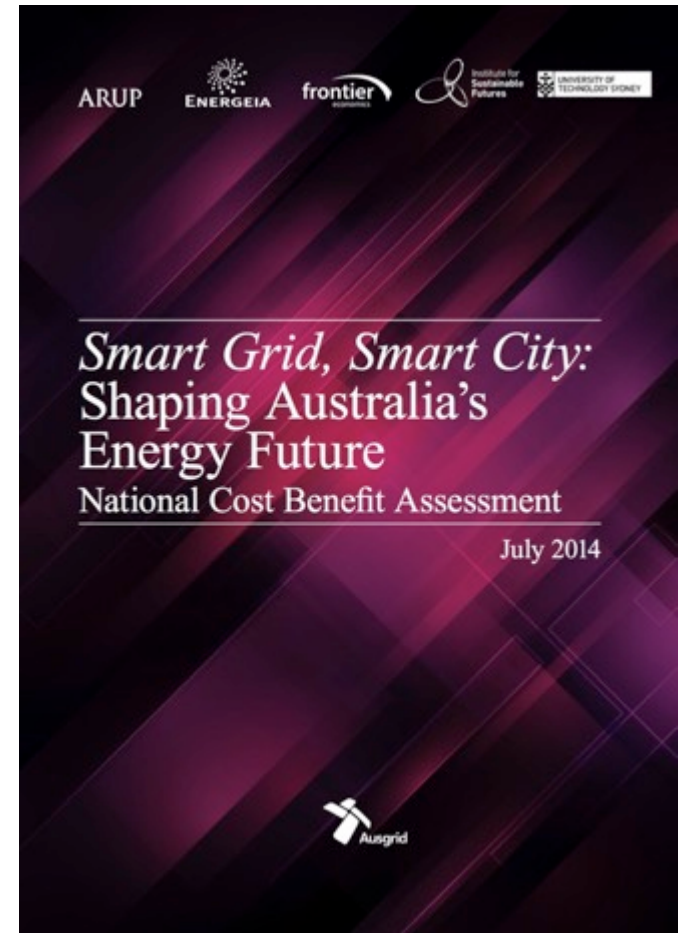
1. Optimise societal benefits by prioritising applications
2. Undertake a commercial-scale deployment that tests the business case and key technologies
3. Investigate synergies with other Australian Government programs and related infrastructure projects
4. Build awareness of the benefits and obtain buy-in from industry and customers
5. Overcome key barriers
6. Inform adoption of smart grid technologies across Australia
7. Develop an innovative solution that can serve as a global reference case.



# SGSC: post implementation

“In the SGSC Program, *almost 30 per cent of sites were found to be unsuitable for the deployment of the smart meter infrastructure... despite a program of pre-qualifications and site visits....*The high level of unsuitable sites in the trial was due to a range of factors, including installation issues and communications coverage. Customer dissent was driven in part by the nature of the deployment.” (2014: 104, emphasis added).

“The SGSC trial found that the costs of installing meters and communications equipment varied significantly for a variety of reasons, including access issues, insufficient meter board space and poor signal strength. The issue of how to equitably distribute the cost of upgrading private shared equipment is one of the key challenges for any market driven rollout. If the issues associated with a market-led rollout of SMI aren’t able to be overcome then the benefits from the products and applications that SMI enables will not be realised..” (2014: 107)



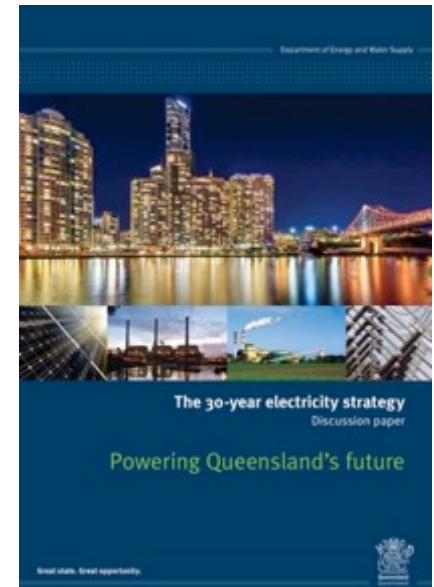
## **3.CONCLUSIONS**

# Policy retreat from smart grids?

“Leadership and the role of government in the development of a national [smart grid] roadmap... [is] unclear, ad hoc and piecemeal.” (Smart Grids Australia 2014: 5)

“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, 28 October 2014).

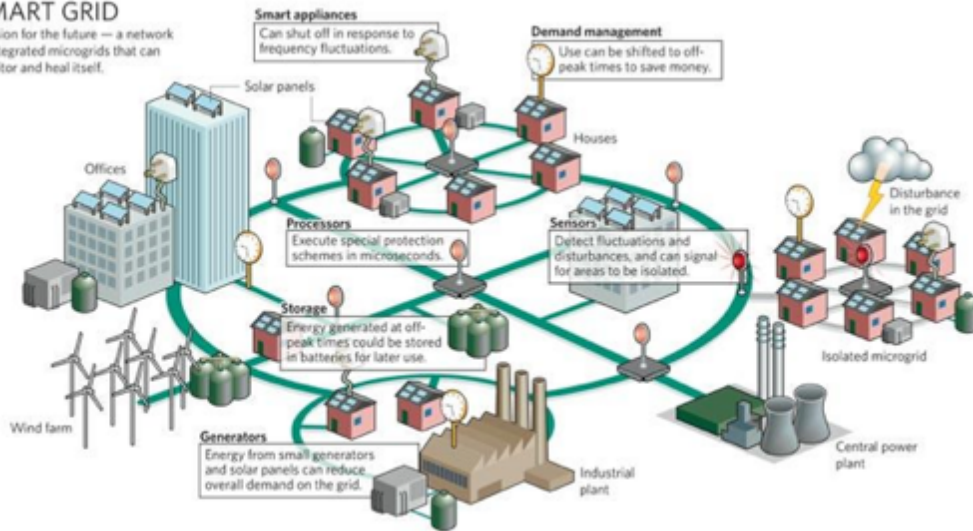
“Tasmania is concerned that the benefits and costs of metering reform are suitably uncertain for the Tasmanian jurisdiction such that the implementation of the [AEMC Metering Competition] rule be delayed” (Tasmanian Department of State Growth, 2015: 2)



# Conclusions

## SMART GRID

A vision for the future — a network of integrated microgrids that can monitor and heal itself.



- Governmentality theorisation is highly applicable to analysing smart grids
- But scope to consider in more depth how technology failures and set backs in smart grid implementation are changing the optimistic rationality/discourse around smart grids
  - STS conceptualisations of the agency of technology
- **Are smart grid technologies challenging rather than accomplishing governance?**

**Thank you, and any questions?**

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Webpages:

<http://www.utas.edu.au/smart-grids-messy-society>

<http://www.utas.edu.au/profiles/staff/live-profiles/heather-lovell>

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