

VIRTUAL NET METERING AND LOCAL NETWORK CHARGES IN AUSTRALIA: AN UPDATE

Smart Future Cities Conference 2015, Newcastle,
NSW, October 1st 2015

SESSION OVERVIEW

Dr Andrew Mears (moderator), CEO, SwitchDin Pty Ltd (moderator)

➤ ***Jay Rutovitz, Institute for Sustainable Futures***

- Context
- Valuing local energy: the concepts
- The project (Facilitating local network charges and VNM)

➤ ***Mark Byrne, Total Environment Centre***

- The Rule Change proposal

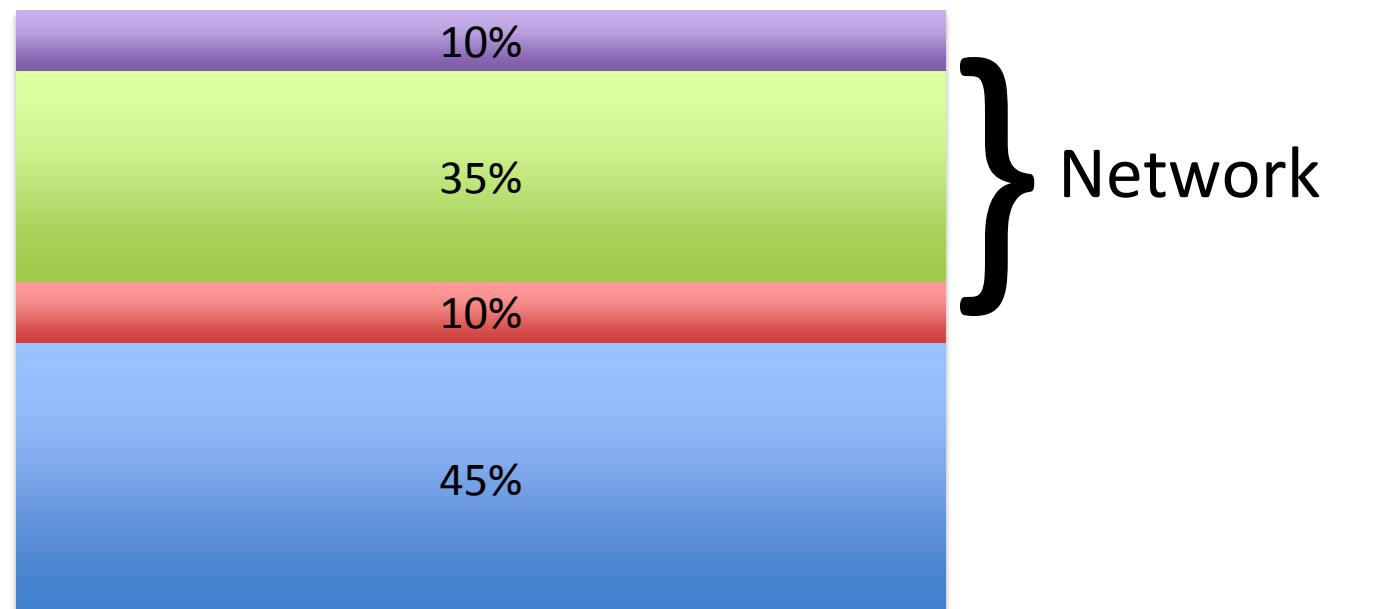
➤ ***Sandi Middleton, Byron Shire Council***

- A local Council perspective

➤ ***Panel session***

Where are electricity's costs?

■ Wholesale electricity ■ Retail operation ■ Distribution costs ■ Transmission costs



Retail Electricity Cost

Dr Andrew Mears (moderator)

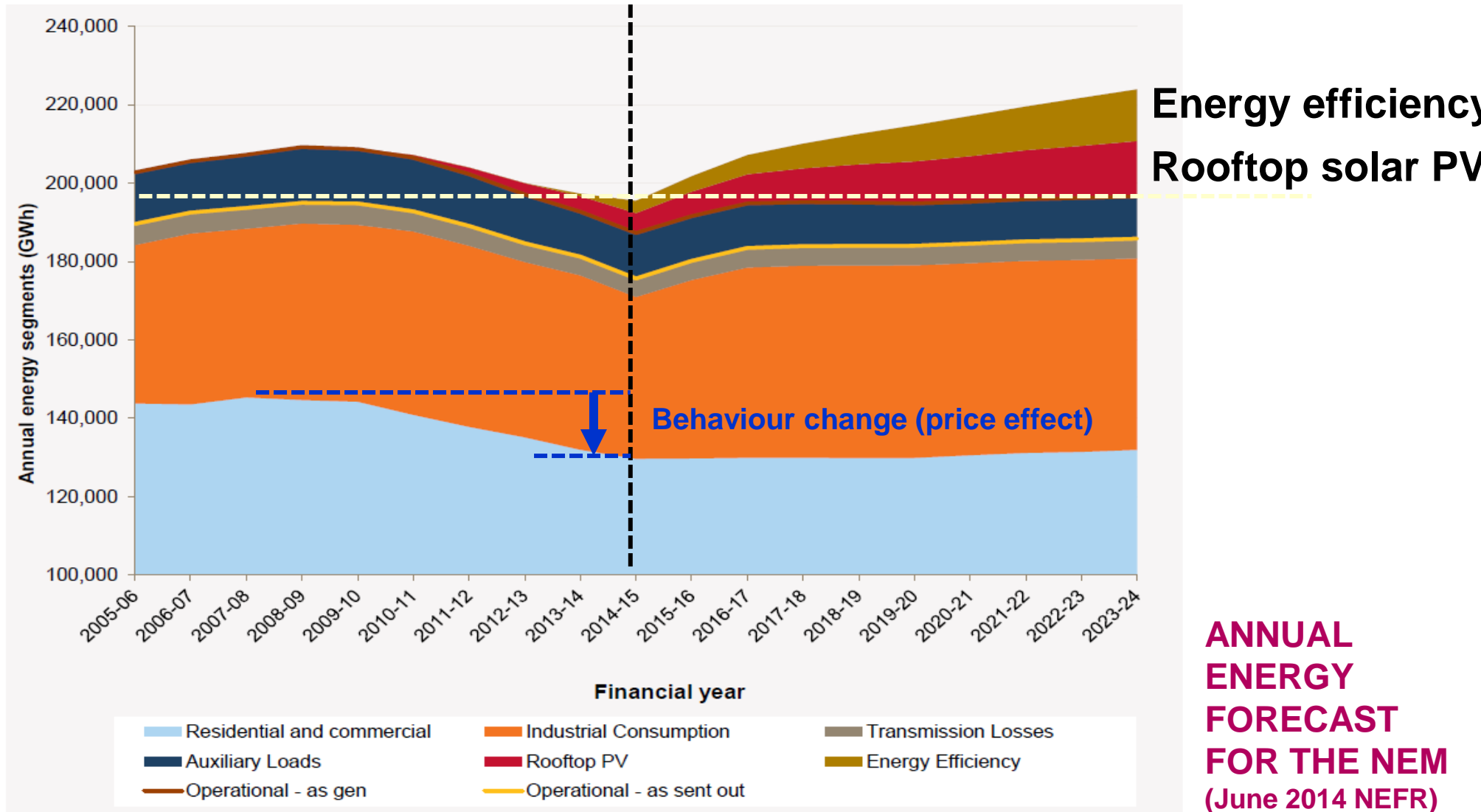
Virtual Net Metering (VNM) – Location matters

- An electricity customer with on-site generation is allowed to assign their ‘exported’ electricity to other site(s).
- ‘virtual’ because there is no direct physical interconnection ... it’s a matter of accounting of these transactions.
- VNM and local network charges both have a big impact on the economics of local generation

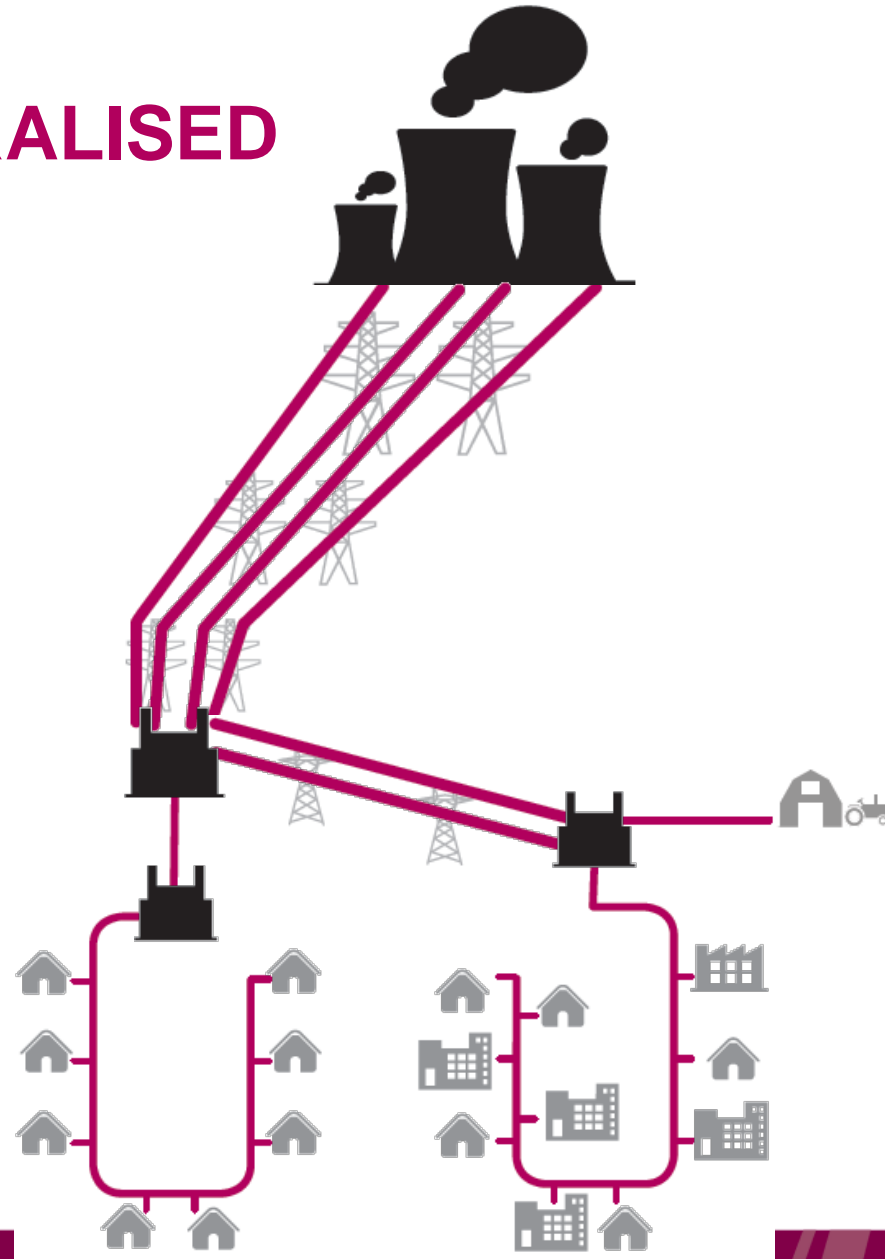
CONTEXT

HISTORIC POINT OF TRANSFORMATION

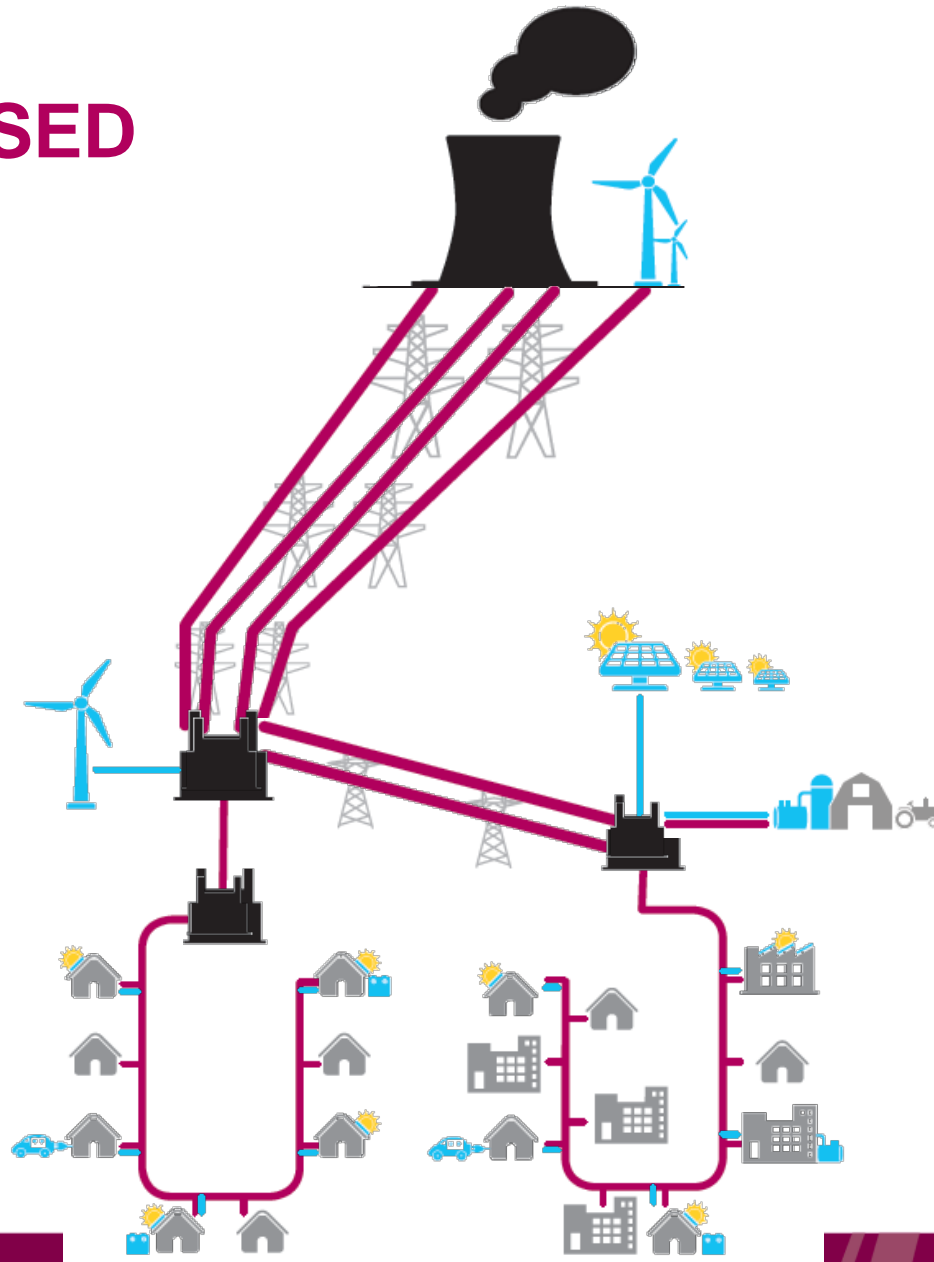
Centralised electricity supply falling, already peaked?



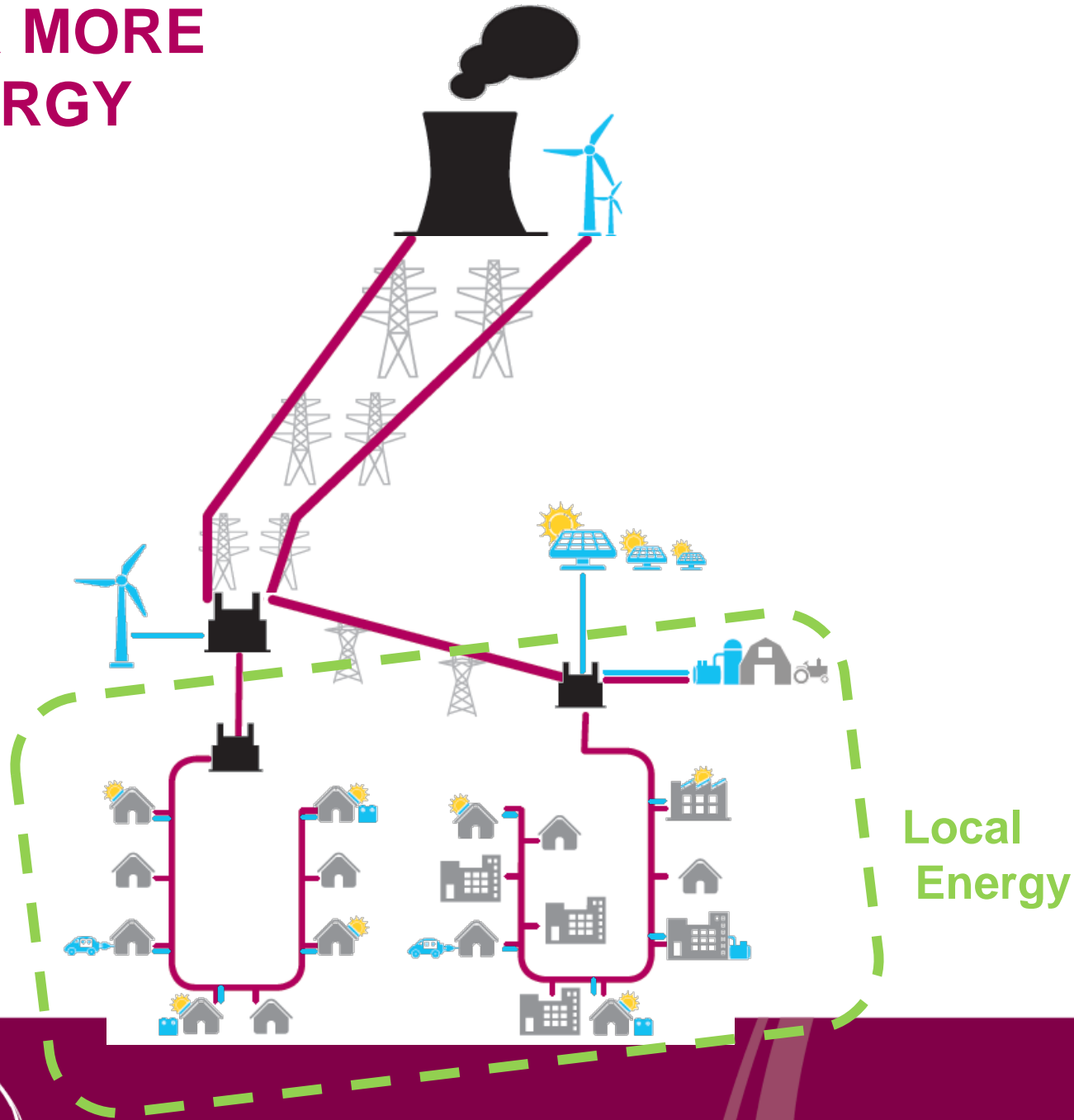
TODAY: HIGHLY CENTRALISED NETWORK



THE FUTURE: DECENTRALISED NETWORK

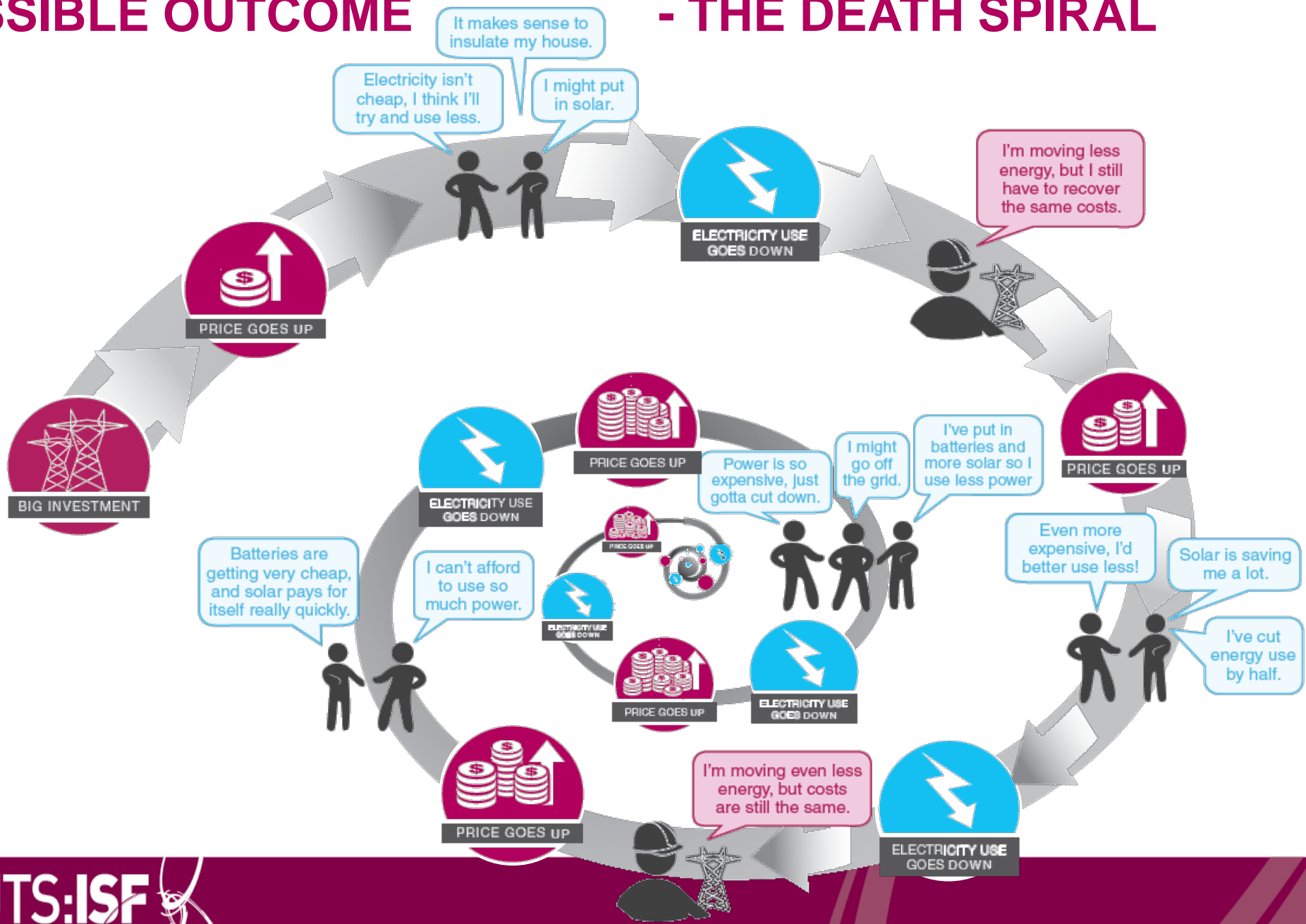


...WITH FAR MORE LOCAL ENERGY

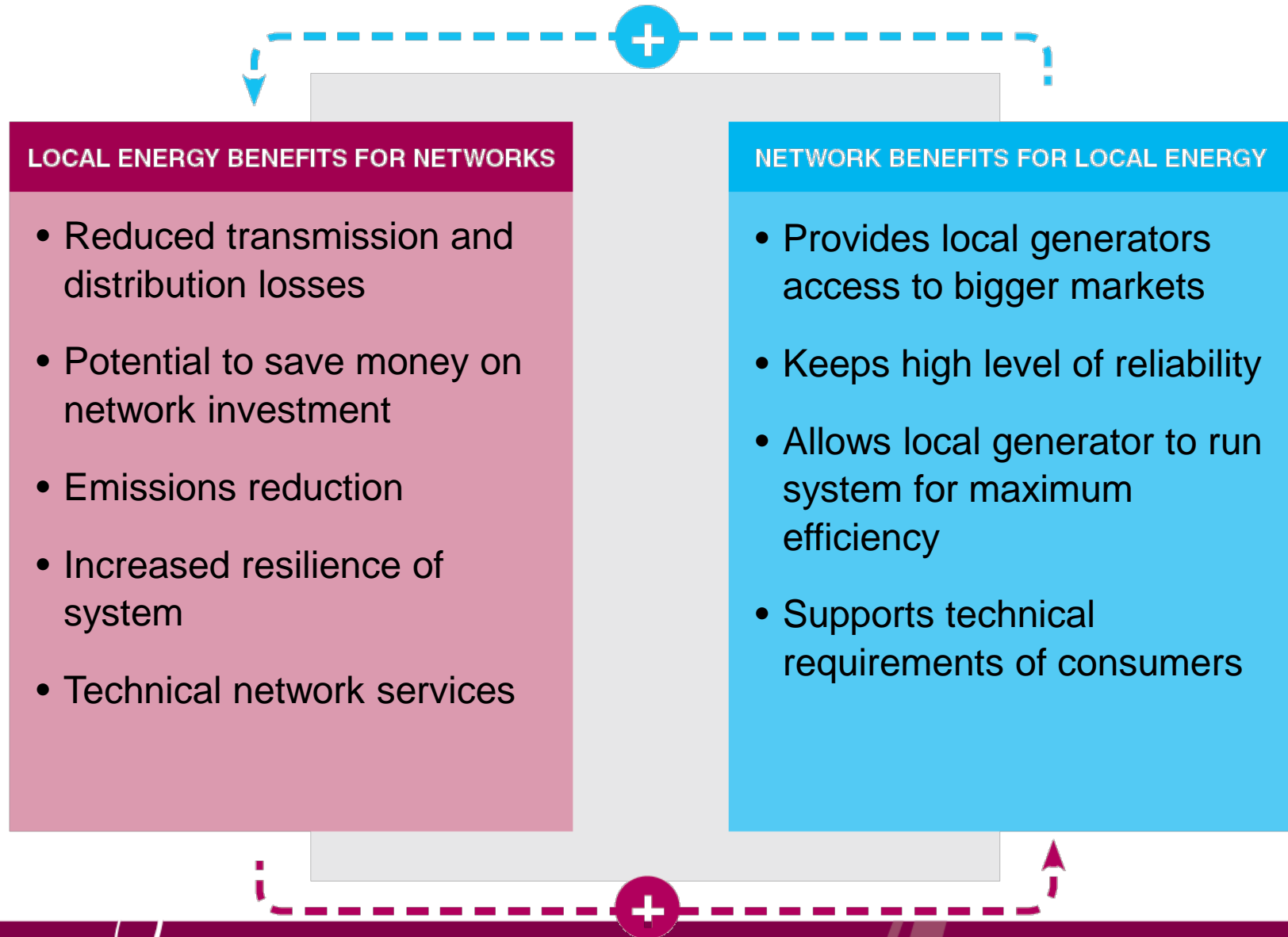


POSSIBLE OUTCOME

- THE DEATH SPIRAL

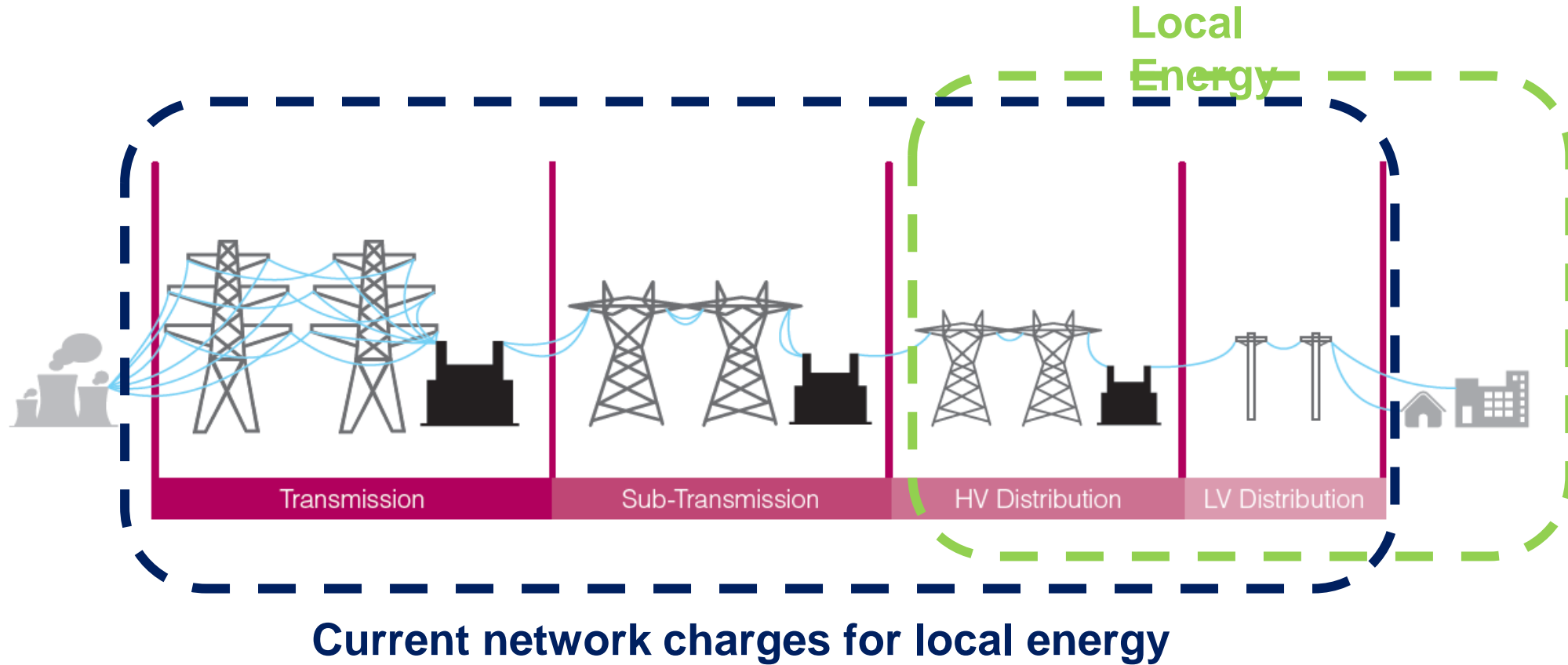


POSSIBLE OUTCOME : MUTUAL BENEFITS



VALUING LOCAL ENERGY : LOCAL NETWORK CHARGES AND LOCAL ELECTRICITY TRADING

NETWORK CHARGES - WHAT HAPPENS NOW



THE PROBLEM

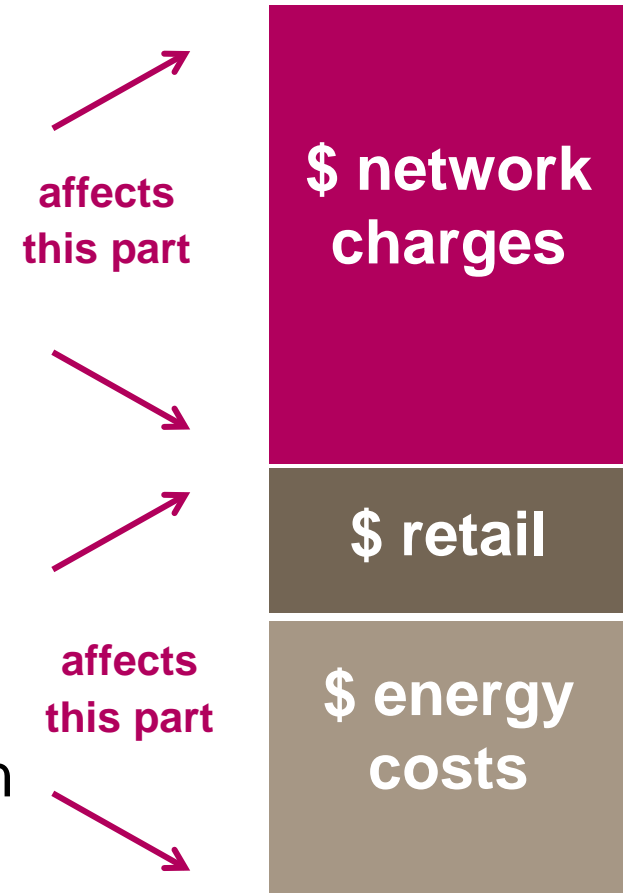
- DGs sell at wholesale and buy back at retail prices
- Strong incentive for customers (and product developers) to focus “behind the meter” & reduce grid consumption
- Perverse incentive to duplicate infrastructure
- Sub optimal sizing of generators and little incentive to supply grid services
- Increases costs for consumers left using *only* grid electricity, as infrastructure costs are recouped from smaller sales volume

THE CONCEPTS

- Local network charges: reduced tariffs for electricity generation used within a defined local network area
- Local Electricity Trading^{***} requires *netting off* generation from one site at another site on a time-of-use basis, so that Site 1 can ‘sell’ or assign generation to nearby Site 2

^{**} *also known as VNM*

TYPICAL MAKEUP OF ELECTRICITY BILL



THE PROJECT: FACILITATING LOCAL NETWORK CHARGES AND LOCAL ELECTRICITY TRADING**

**** *VIRTUAL NET METERING (VNM)***

THE PROJECT

Objective: To facilitate the introduction of local network charges & Local Electricity Trading**

- Five case studies, or “virtual trials”
- A recommended methodology for calculating local network charges
- An assessment of technical requirements and indicative costs for Local Electricity Trading
- Economic modelling of benefits & impacts
- Increase stakeholder understanding and support for rule change(s)

**** also called *Virtual Net Metering or VNM***

PARTNERS: A BROAD COALITION

PROJECT
LEAD



MAIN
SPONSOR

ARENA



Networks NSW

Energy Australia

Electricity Retailers Association

Electricity Networks Association

Clean Energy Council

Coalition for Community Energy



**CITY OF
SYDNEY**



**Renewable Energy
Advocate**

virtual THE TRIALS

^

FRINGE OF GRID

Tech	Bioenergy (TBC)
Network	Ergon Energy
Retailer	Ergon Energy
Model	One → Several

BYRON

Tech	PV
Network	Essential
Retailer	
Model	Council 1 → 1

WILLOUGHBY

Tech	Cogen
Network	Ausgrid
Retailer	Energy Australia
Model	Council 1 → 1

MOIRA/SWAN HILL

Tech	PV
Network	Powercor
Retailer	AGL
Model	1 → Many OR Many → 1

WANNON WATER

Tech	Wind
Network	Powercor
Retailer	AGL
Model	1 → 1 OR 1 → 2

Stay in touch – project website &
sign up for newsletter

<http://bit.do/Local-Energy>

or email: jay.rutovitz@uts.edu.au

THE RULE CHANGE PROPOSAL

Mark Byrne,
Total Environment Centre



Oakley Greenwood

Local Generation Network Credit Rule Change Proposal

Submission to:
Australian Energy Market Commission

Proposed by:
City of Sydney
Total Environment Centre
Property Council of Australia

Virtual Net Metering Trial in the Byron Shire

Sandi Middleton
Sustainability Officer



Traditional home of
the Bundjalung people



Key benefits to Council and our community

- New financial incentive for generating renewable energy in the Byron Shire
- Increased energy resilience & reduced greenhouse gas emissions hence helping to meet our Zero Net Emissions target
- Social equity - mitigate the potential effect of spiralling customer loss from the network

Why the Byron Region?



Byron Shire Council

www.byron.nsw.gov.au

West Byron
Sewage Treatment
Plant
(1048 MWh/yr)

2.7km

Byron Regional
Sports Complex
(134 MWh/yr)

How will the trial work?

Technology: **PV**

Network: **Essential Energy**

Retailer: **Energy Australia**

Model: **Council to Council**

Byron Shire Council Trial

Energy Australia

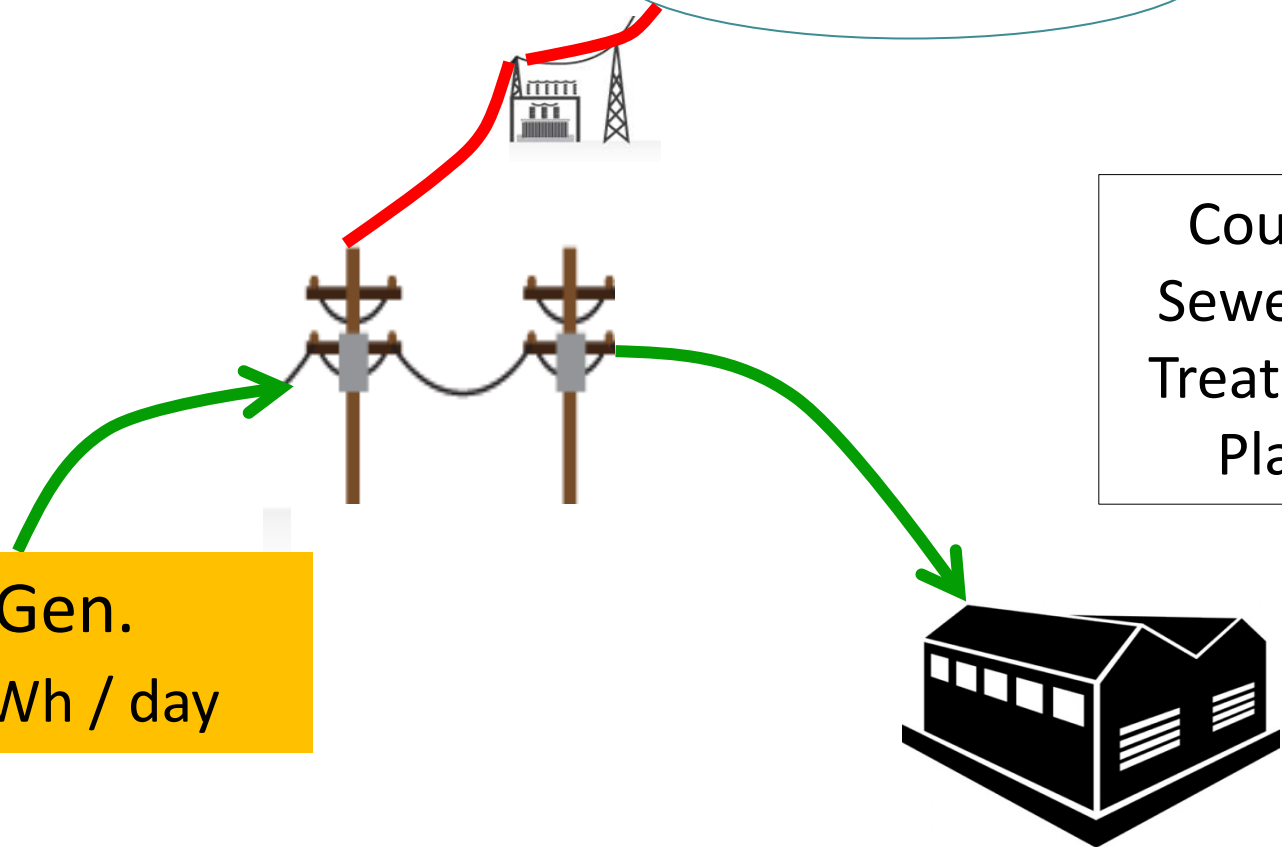
Essential Energy

Council
Sports
Centre

Council
Sewerage
Treatment
Plant

Solar Gen.
100 kWh / day

Total Usage
2860 kWh/day





Willoughby City Council

- **Generator:** Willoughby Leisure Centre - existing co-generation
- **Consumer:** Council's main administration building
- **Parties:**
 - Customer: Willoughby City Council
 - Network provider: Ausgrid
 - Energy retailer: Energy Australia

Any questions

Byron Shire Council

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Willoughby City Council

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