

Welcome to Bio Energy Ass. webinar

How to get **best prices**
when **selling electricity** from
small scale generation

Duration: 40 min

Meeting is **Recorded**

Agenda:

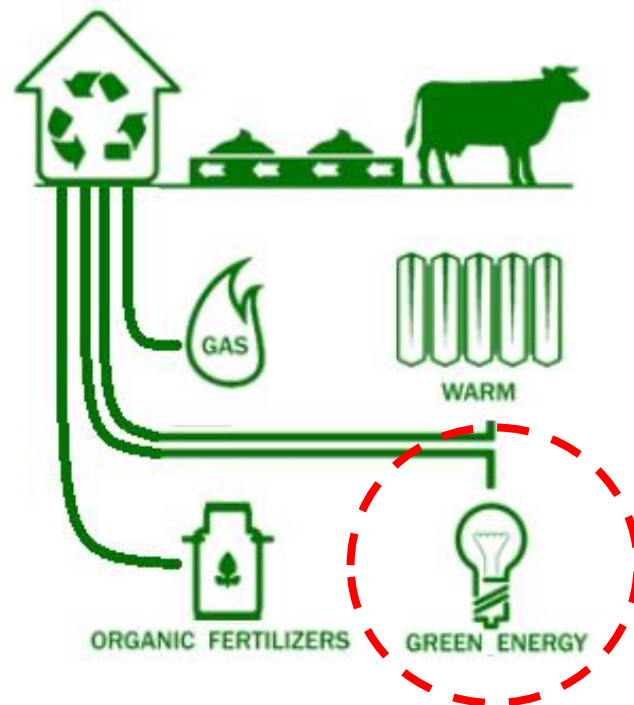
New Zealand Electricity Market Complexity

Taking advantage of Time of Use

Optimising grid interface

Questions and Answers

Presenter: Roy Netzer - Power Edge Ltd ☎ 0508 11 33 22







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Attendance at this webinar is FREE courtesy of EECA



New Zealand Electricity Market Complexity

Retailers attitude towards small Power Generators

	VARIABLE USAGE CHARGE			
	Standard - Contract Generation	6,584 kWh x 22.09 cents/kWh	Import when buying	\$1,454.41
		2,495 kWh x -8.00 cents/kWh	Export when selling	\$199.60cr
	DAILY FIXED CHARGE	28 days x 222.32 cents/day		\$62.25
	ELECTRICITY AUTHORITY LEVY	6,584 kWh x 0.12 cents/kWh		\$7.90
	GST	WARNING: GST was suppose to be \$198.74 REASON: Credit of 8c is <u>GST inclusive</u>		\$228.68
TOTALS				\$1,553.64

Fixed rate agreement:

- Certainty
- Protection from market volatility
- Best option (unless TOU)

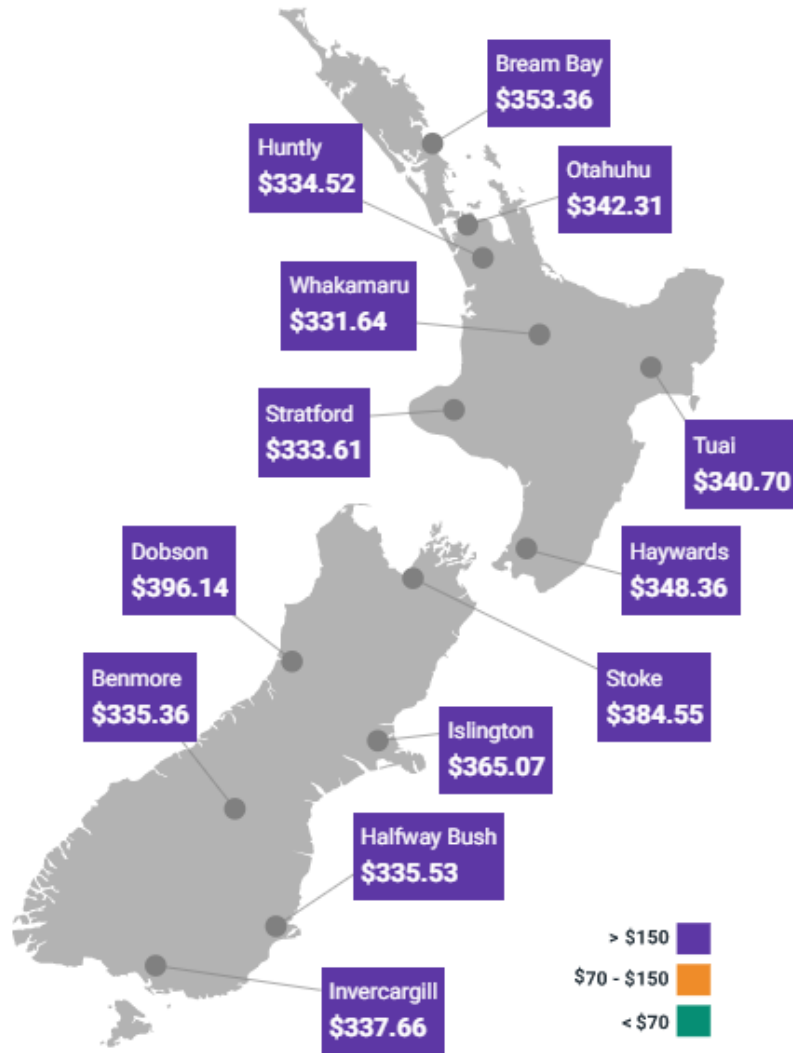
85% of our customers are small scale power generators
 Power Edge 1st aim is offering best export prices

CONCLUSION: This small scale power generator:
 Imports power @ 25.40c per kWh
 Exports power @ ~~8.00c~~ per kWh
 14.37c with PowerEdge

New Zealand Electricity Market Complexity

RTP (5 MIN) PRICES TP 21 (10:15)

Market Volatility



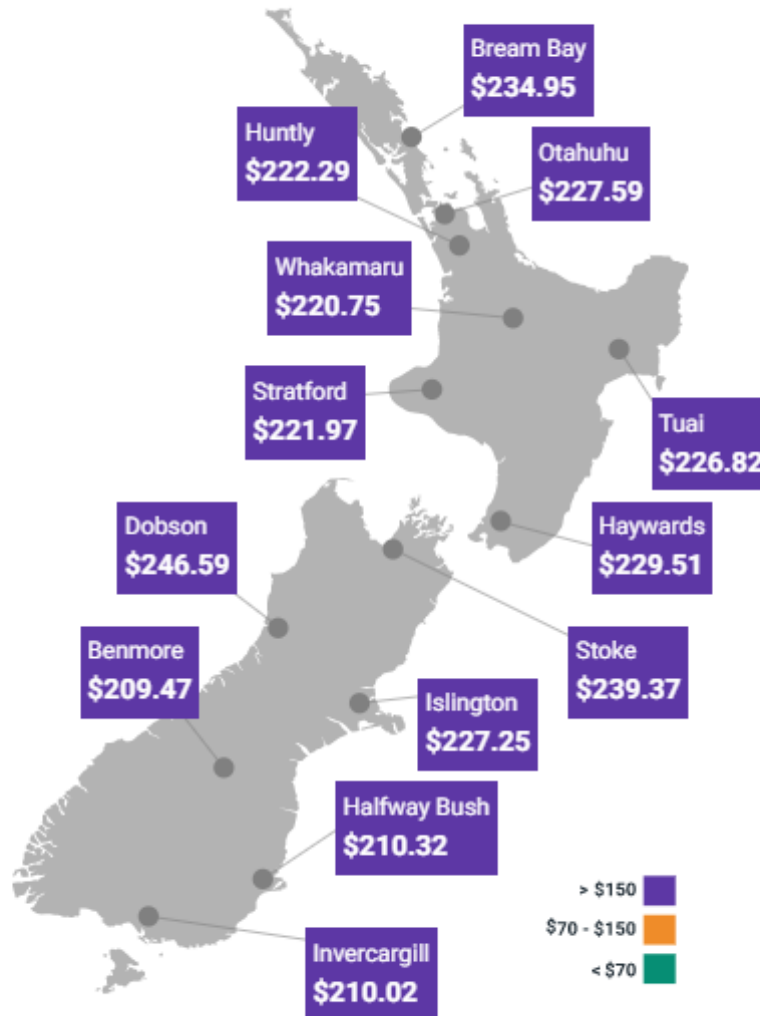
<https://www2.electricityinfo.co.nz/>

Run time: 2021-02-18 10:20:30

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RTP (5 MIN) PRICES TP 22 (10:50)



Market Volatility

<https://www2.electricityinfo.co.nz/>

35 minutes Later

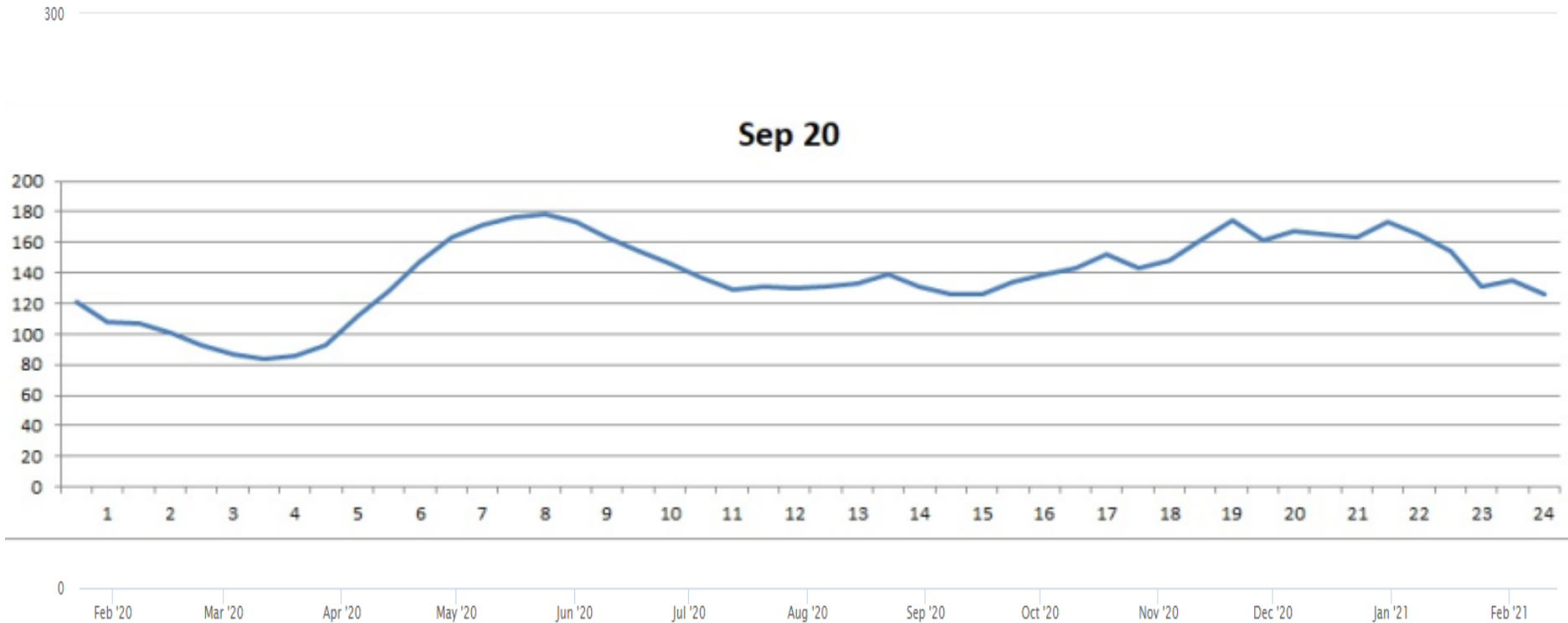


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New Zealand Electricity Market Complexity

Market Volatility



New Zealand Electricity Market Complexity

Category M12

Hawke's Bay

Line Companies attitude towards small Power Generators

Hawke's Bay Residential Standard Price Codes – M12				
Price Option	Price Code	Description	Units	Price 1 April 2019
	F-H-M12	Standard, fixed charge	\$/day	\$ 1.1500
24UC	E-H-M12-24UC	Standard, uncontrolled variable charge	\$/kWh	\$ 0.0900
AICO	E-H-M12-AICO	Standard, all inclusive variable charge <i>- closed for new installations</i>	\$/kWh	\$ 0.0688
CTRL	E-H-M12-CTRL	Standard, controlled variable charge	\$/kWh	\$ 0.0362
CTUD	E-H-M12-CTUD	Standard, day variable charge	\$/kWh	\$ 0.1161
NITE	E-H-M12-NITE	Standard, night variable charge	\$/kWh	\$ 0.0320
PROJ	E-H-M12-PROJ	Standard, projected variable charge <i>Cannot be selected by a customer</i>	\$/kWh	\$ 0.0900
DGEN	E-H-M12-DGEN	Standard, distributed generation export variable charge	\$/kWh	\$ 0.0000

Daily charges are up 61.6c



9.7 DG price codes:
Price category G12

Hawke's Bay

Hawke's Bay Distributed Generation Standard Price Codes – G12				
Price Option	Price Code	Description	Units	Price 1 April 2019
	F-H-G12	Standard, Fixed charge	\$/day	\$ 1.7660
24UC	E-H-G12-24UC	Standard, uncontrolled variable charge	\$/kWh	\$ 0.0900
AICO	E-H-G12-AICO	Standard, all inclusive variable charge <i>- closed for new installations</i>	\$/kWh	\$ 0.0688
CTRL	E-H-G12-CTRL	Standard, controlled variable charge	\$/kWh	\$ 0.0362
CTUD	E-H-G12-CTUD	Standard, day variable charge	\$/kWh	\$ 0.1161
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PROJ	E-H-G12-PROJ	Standard, projected variable charge <i>Cannot be selected by a customer</i>	\$/kWh	\$ 0.0900
DGEN	E-H-G12-DGEN	Standard, distributed generation export variable charge	\$/kWh	\$ 0.0000



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New Zealand Electricity Market Complexity

Players

The Electricity market is split into **Regulation, administration, generation, market clearing**, transmission, **distribution**, metering and **retail**.

The market is regulated by the Electricity Authority (EA) and operates under the Electricity Industry Participation Code (EIPC)

Trade takes place at more than 226 pricing nodes across New Zealand and is influenced every ½ hour by 59 Generation injection points

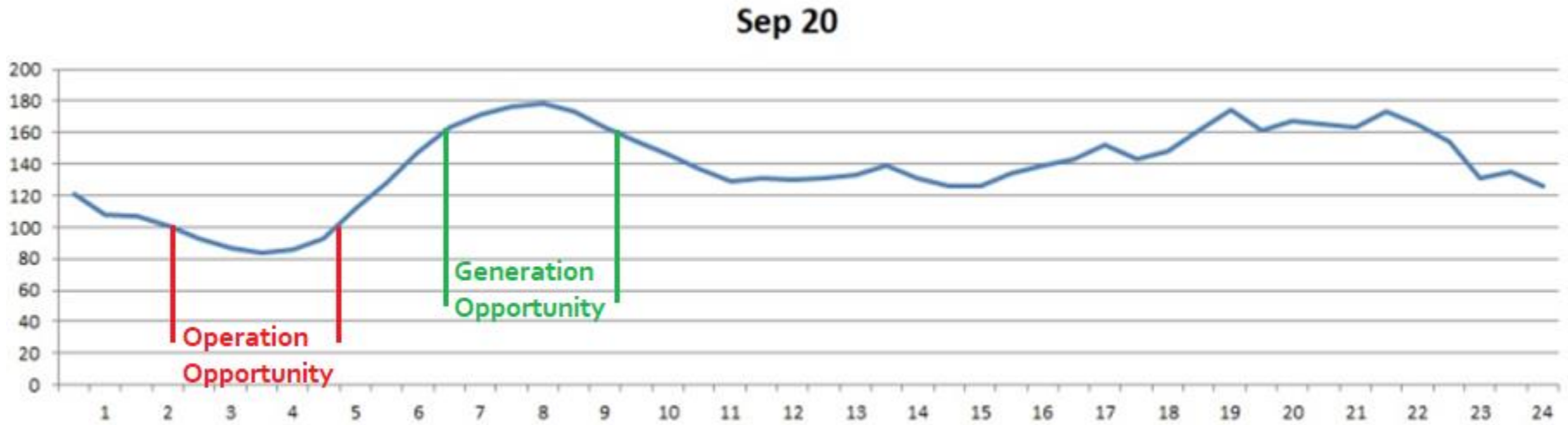
30 Line companies (trust owned) have a regional monopoly control

151 Power retailers – less than 50 are trading directly with market (Tier 1)

The 5 largest Power Retailers together produce ~95% of NZ electricity

Market Abuse: Unfortunately, the 2009 report of commerce commission found ability of the four largest electricity suppliers to exercise unilateral market power in the wholesale electricity market.

Taking advantage of Time of Use



Power Edge 2nd aim is ensuring that all customers are on the Optimal Price Plan

Ideally:

Generate the power from 6 to 10am

Use power for heat & machinery from 2 to 5AM

Other Considerations that could upset the math:

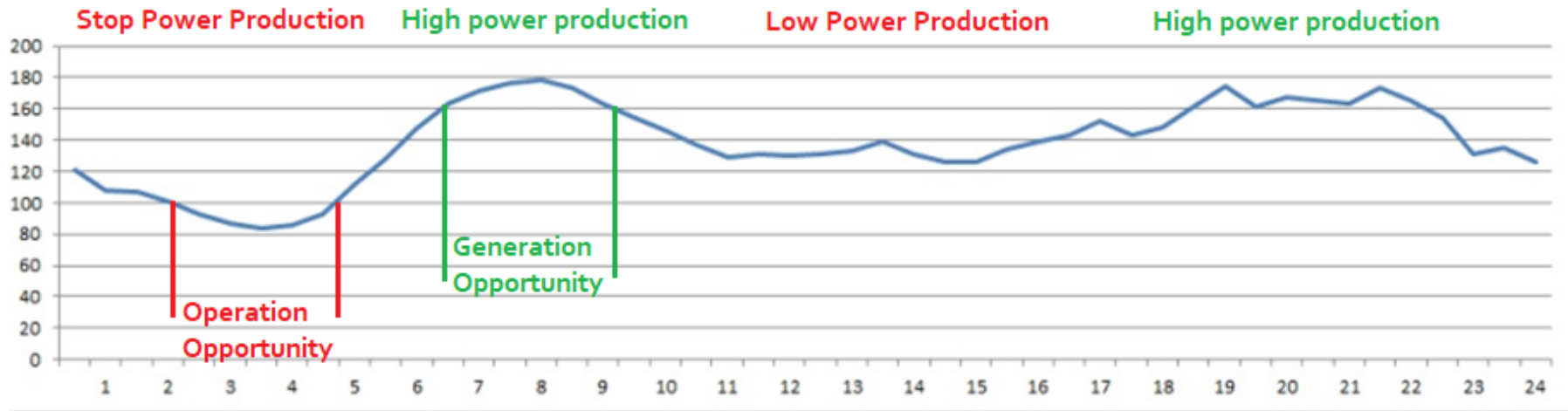
Line Company usage fee 7 to 11am is \$121.90

Line Company usage fee 2 to 7am is \$23.00

* Vector General TOU Price Category

Taking advantage of Time of Use

Take Control



To achieve the above, you need a **Control Mechanism**

Can you control the power production?

- Do you have energy storage or a buffer?
- Is your equipment “staged” or can be turned on & off at ease?
- Do you have any control / some control / remote control?
- Can you add control to existing plant?
- Is your production limited by local lines infrastructure?

Taking advantage of Time of Use

Controller Investment

Nearly always, **Controller Investments** pay off within **less than 3 years**

Control Options are:

- Fixed time control
- Fixed time plus seasonal variations
- Fully automated tariff [control switch](#)

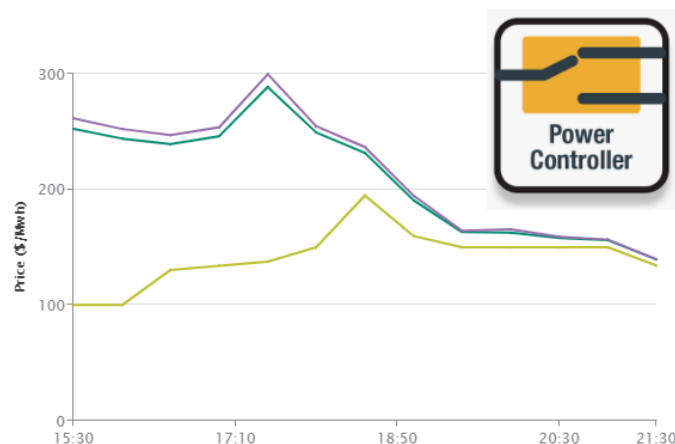
Capital Investment Options are:

- 5 years lease to buy option
- Controller upgrade with fixed prices guarantee
- Controller upgrade with Market Prices (high risk option)

Better Control = Better Buy Back = Better ROI for the project

We upgrade all revenue meters and check meters for FREE

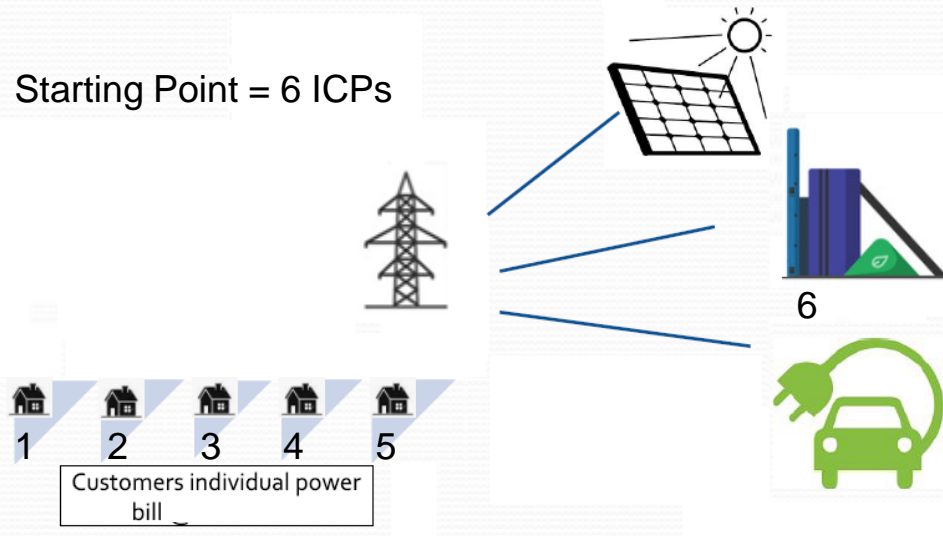
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Optimising grid interface

Thinking outside the Square

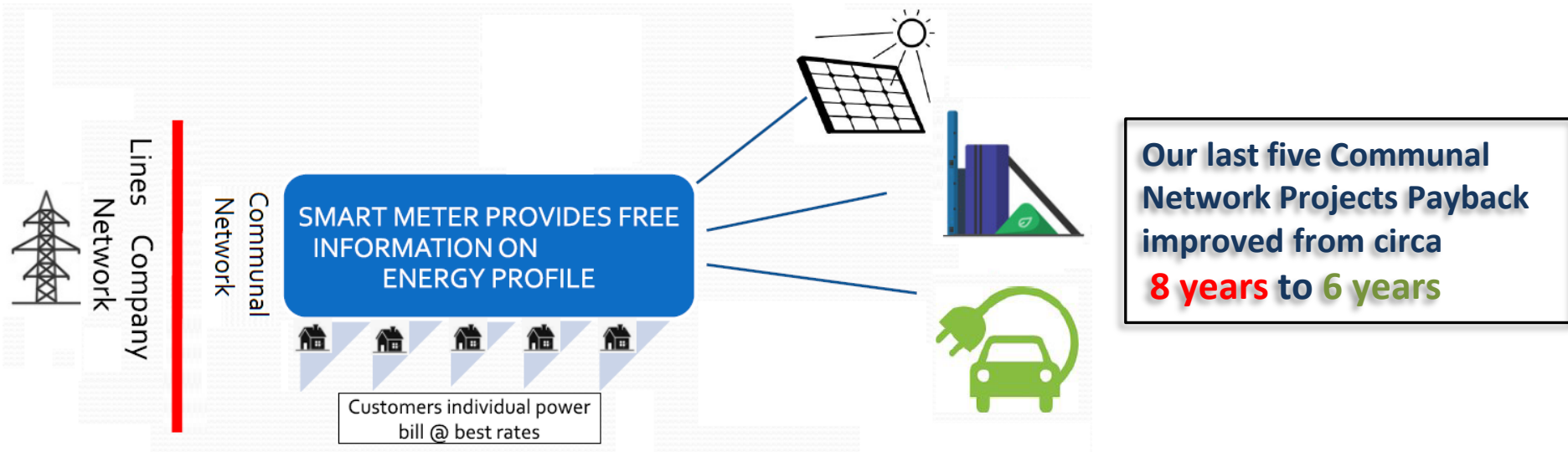
- **Optimal Price Plan and Price Category**
- **Production limited by local lines infrastructure**
- **Before Power Sharing**



Optimising grid interface

Thinking outside the Square

- **Optimal Price Plan and Price Category**
- **Production limited by local lines infrastructure**
- **Power sharing with local community = Communal Network**



Our last five Communal Network Projects Payback improved from circa **8 years** to **6 years**

Power Edge 3rd aim is implementation of renewable Communal Networks

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