



Sustainability victoria



Barriers and Potential Opportunities to Distributed Generation

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About Sustainability Victoria

Sustainability Victoria is an agency of the Victorian Government which facilitates and promotes the sustainable use of resources

Our Vision

Victorians use resources sustainably support to support a thriving community and economy

Our Purpose

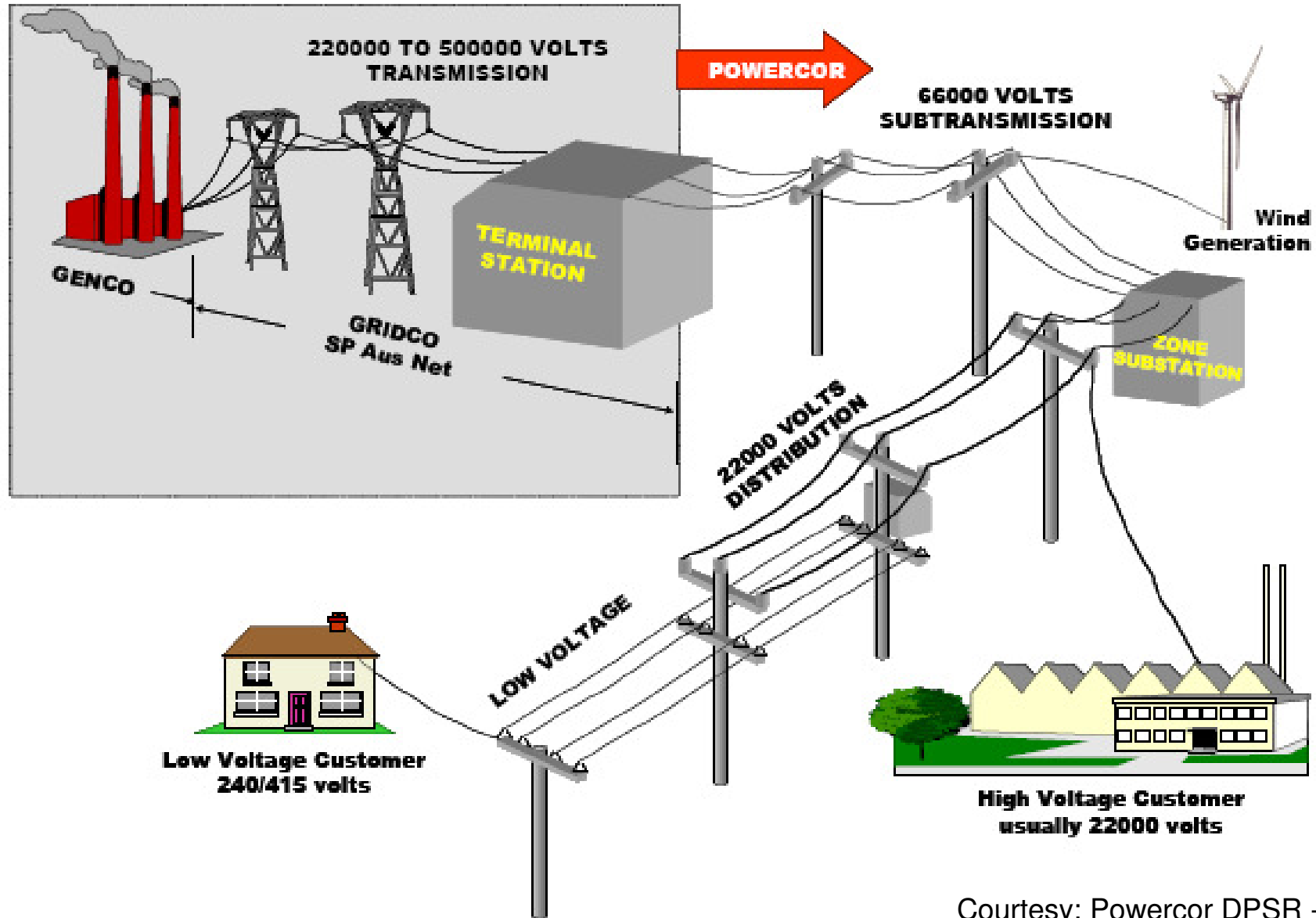
We are a catalyst for sustainable growth and development in Victoria, bringing together the knowledge and capabilities of people, organisations and communities to deliver integrated social, economic and environmental outcomes

Distributed Generation?

- > Distributed/Decentralised Generation (DG) or Embedded Generation (EG)

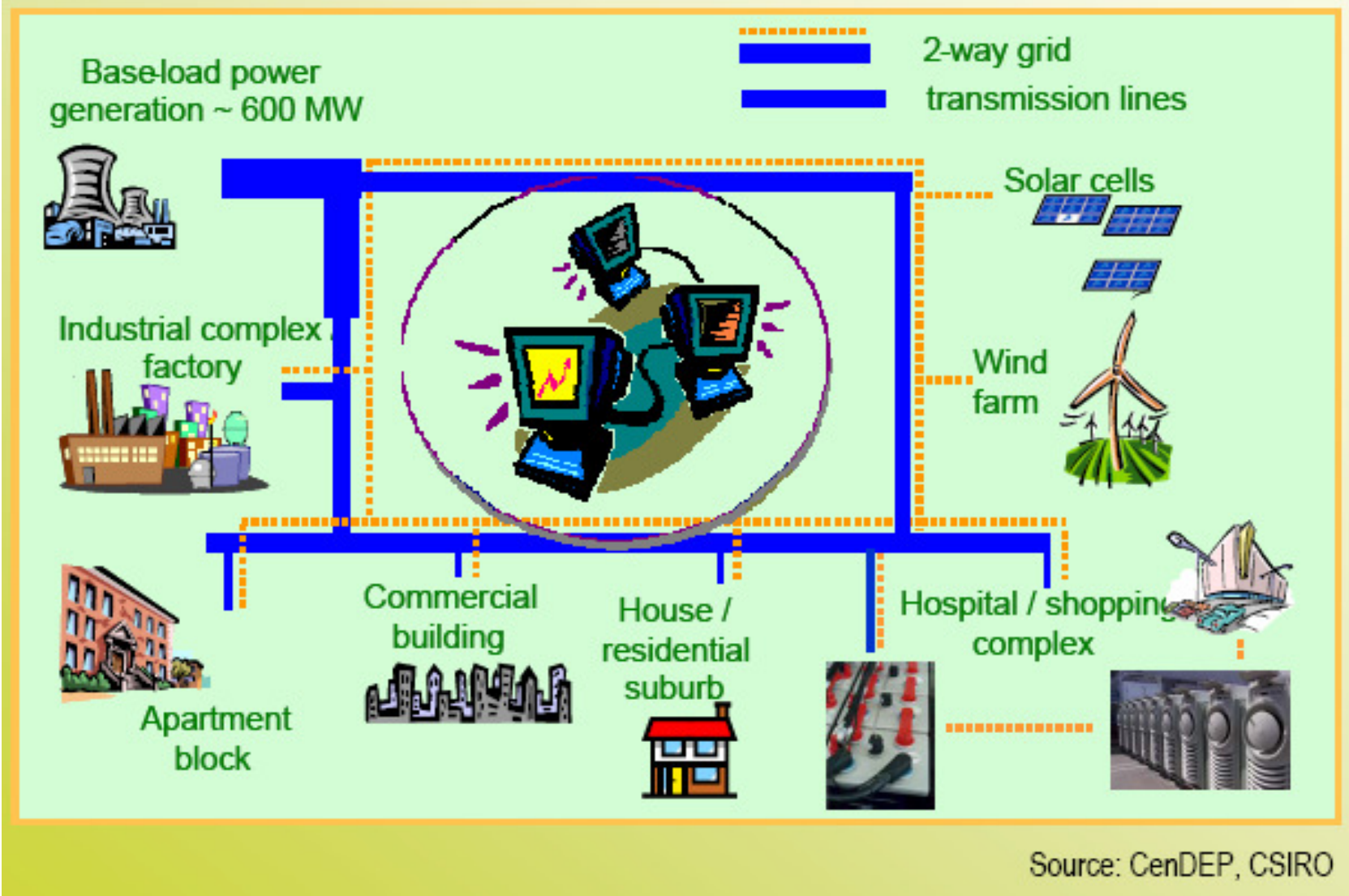
usually defined as:

Electric generation connected to the distribution level of the transmission and distribution grid usually located at or near the intended place of use

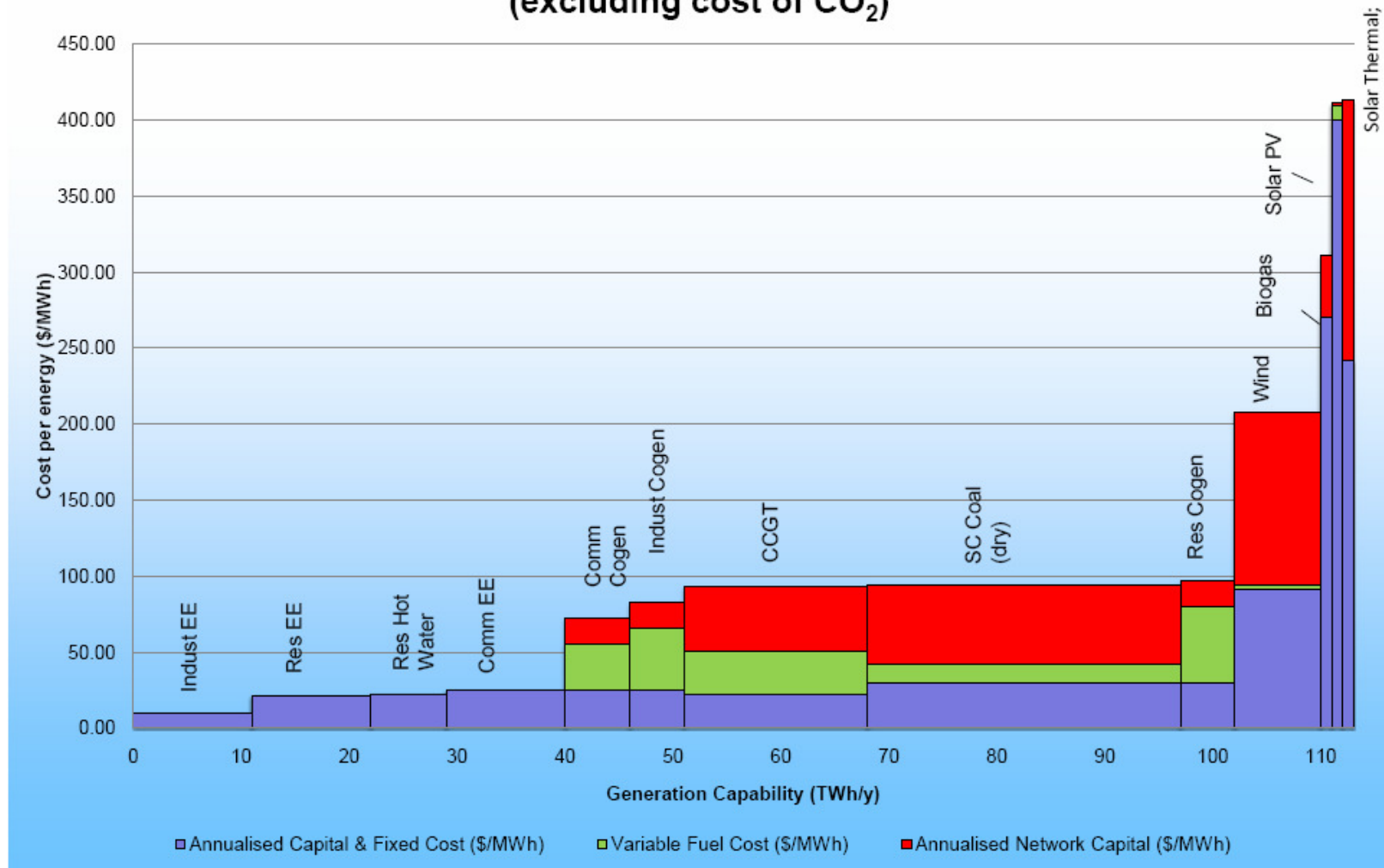


Courtesy: Powercor DPSR -2005

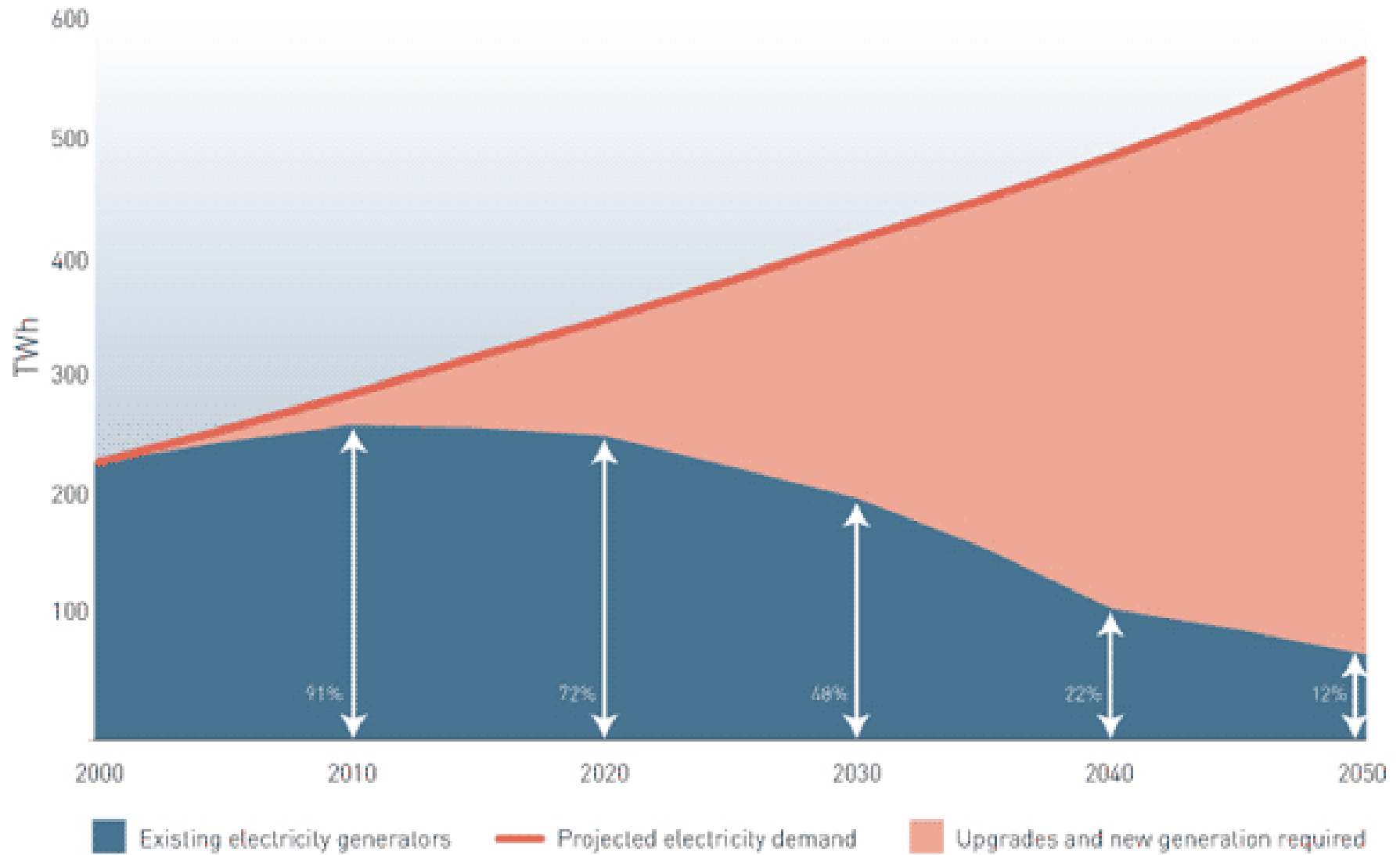
Decentralised Energy System



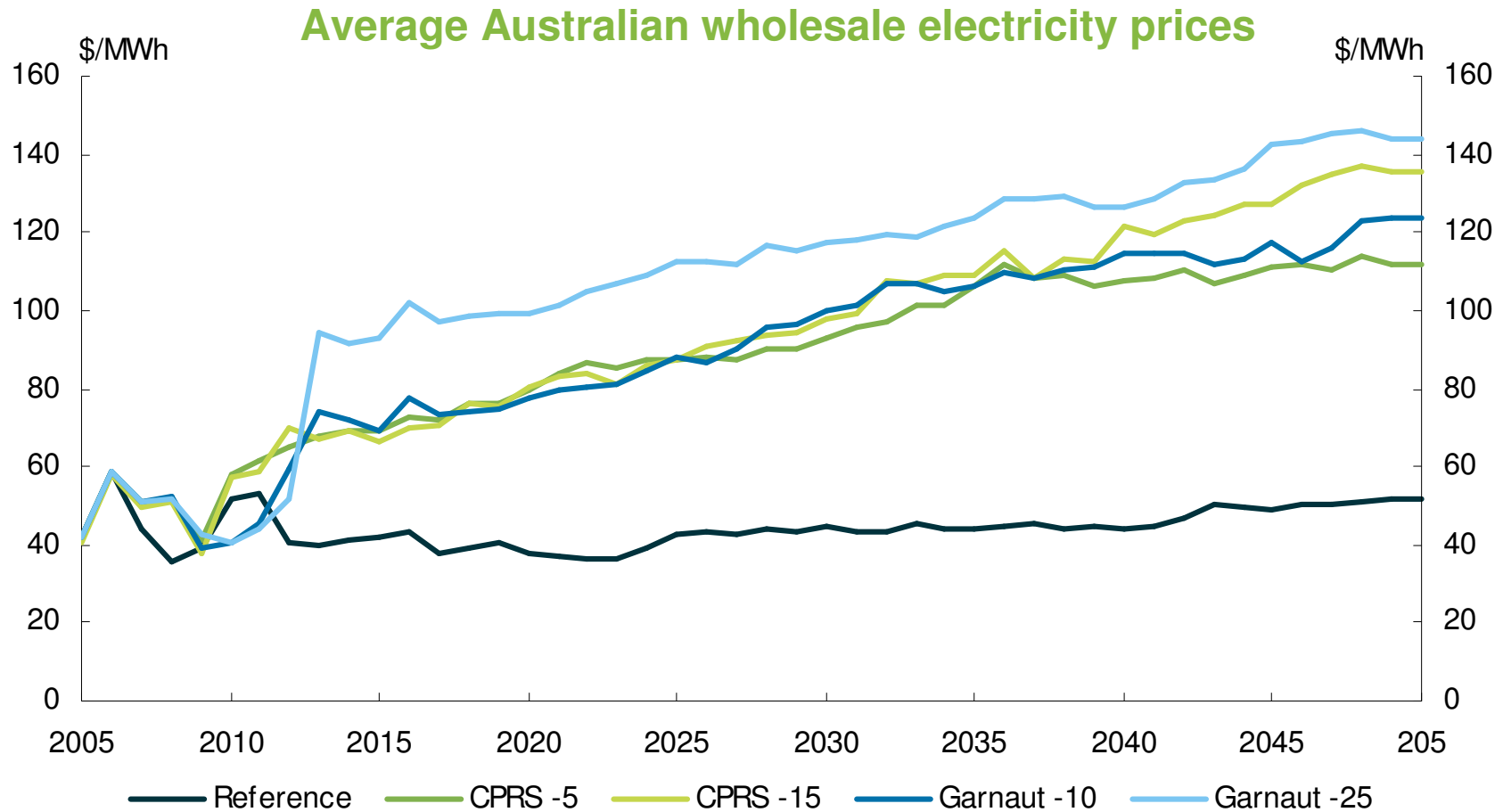
Cost of Technologies to Meet Energy Demand (excluding cost of CO₂)



Ref: Chris Dunstan, I-Grid Intelligent Forum, Melbourne July 2009

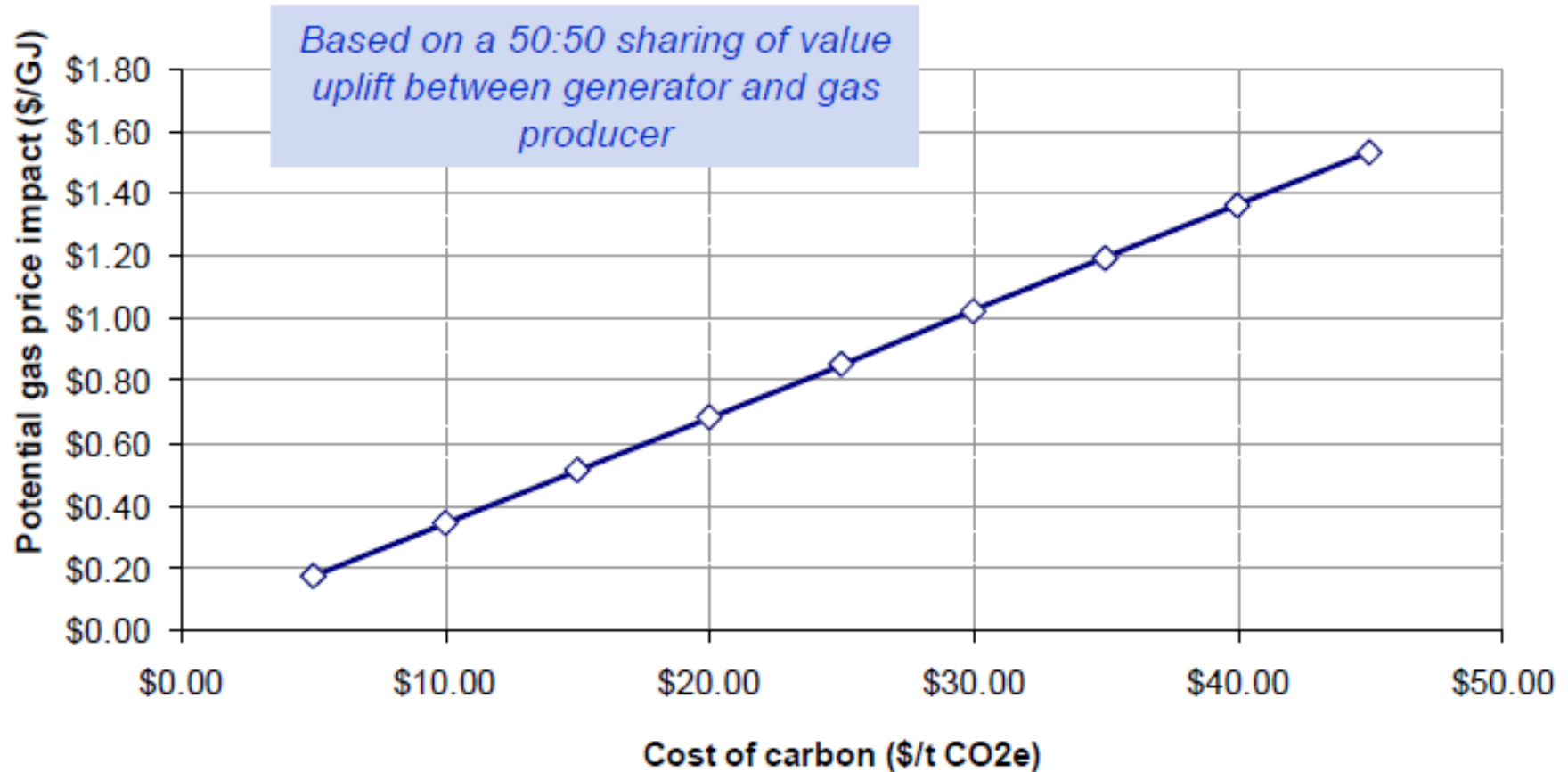


Electricity price impacts through carbon pricing –



> Extract from Treasury Modelling (MMA), 2008

Gas price impacts through carbon pricing



- > Ref: Eastern Australian Gas Market Outlook EUAA
National Energy Price & Market Update June 2009 Paul Breslin, ACIL Tasman

Motivations?

Internationally, especially in the UK and US, there is recognition of the benefits of DG and significant interest in promoting increased deployment of DG

> Motivations include

- reducing network losses
- lowering greenhouse gas emissions
- making more efficient use of energy resources
- enhanced security of supply

Barriers to DG uptake

– mostly regulatory and institutional

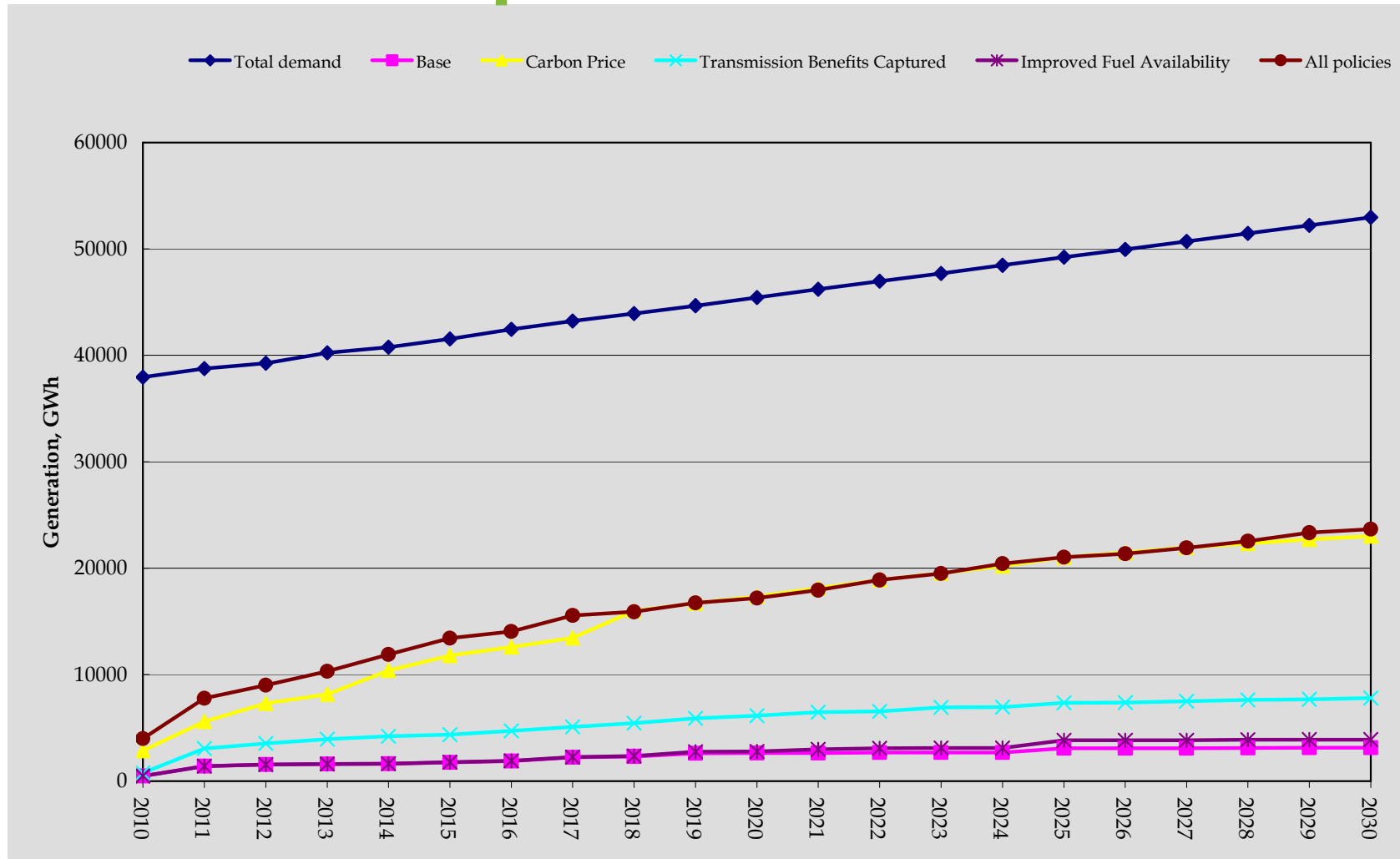
- > The building block regulatory regime
 - Does not appropriately recognise the DG attributes
 - Insensitivities towards demand management
- > Costs of GHG not factored in energy pricing
- > Perceived revenue risks by network service providers
- > Insufficient transparency in network connection arrangements
 - Complex and inconsistent standards and processes
 - Complex use of system charges

Inability to correctly value distributed generation

Potential advantages and role of DG in Victoria

- > **Lower GHG emission** using less carbon intensive fuels and electricity supply
 - currently about **1.35 kg CO₂-e/kWh**
- > **Reduced T&D losses** leading to higher economic benefits - due to local/near load generation ~ 10%
- > **Reduced network costs**
 - avoided and deferred network upgrades
- > **Improved security of supply**
 - expanded energy resource base and capacity

Potential Uptake of DG in Victoria



> extract from report to SV by the consultancy MMA in 2007 to examine the business case for DG in Victoria

What benefits to Victoria

Current DG capacity in Vic:

~350 MW out of total 9000 MW

Potentially benefits include*:

- > DG to supply up to a **third of future electricity load**
 - 14,000 - 20,000 GWh by 2020- 2030
- > a **reduction in retail electricity costs** - up to 5%
- > a **net benefit of \$2.4 billion to the electricity sector by 2030**
(to put this in perspective current annual electricity sales in Victoria is nearly \$2 billion)
- > **15 million tonnes** of potential annual GHG abatement

*extract from report to SV by the consultancy MMA in 2007 to examine the business case for DG in Victoria

AEMC Review and recommendations on Distribution Network Planning and Expansion

- > Each DNSP to establish and maintain a **Demand Side Engagement Strategy**
 - clarify the opportunities and processes for dealing with **non-network alternatives including embedded generation** in each jurisdiction
- > **Report on capacity and load forecasts** (including peak demand) for sub transmission assets, zone substations and transmission-distribution connection points.
 - help identify upstream augmentation needs
- > Regulatory Investment Test for Distribution (RIT-D) to identify the investment option that maximises the present value of net economic benefit to all those who distribute electricity in the market - threshold set at \$5 million
 - a “least cost” test which minimises net economic costs, replacing the current regulatory test



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