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Building the bridge: a practical plan for a low-cost, low-emissions energy future

Solar Cities Conference

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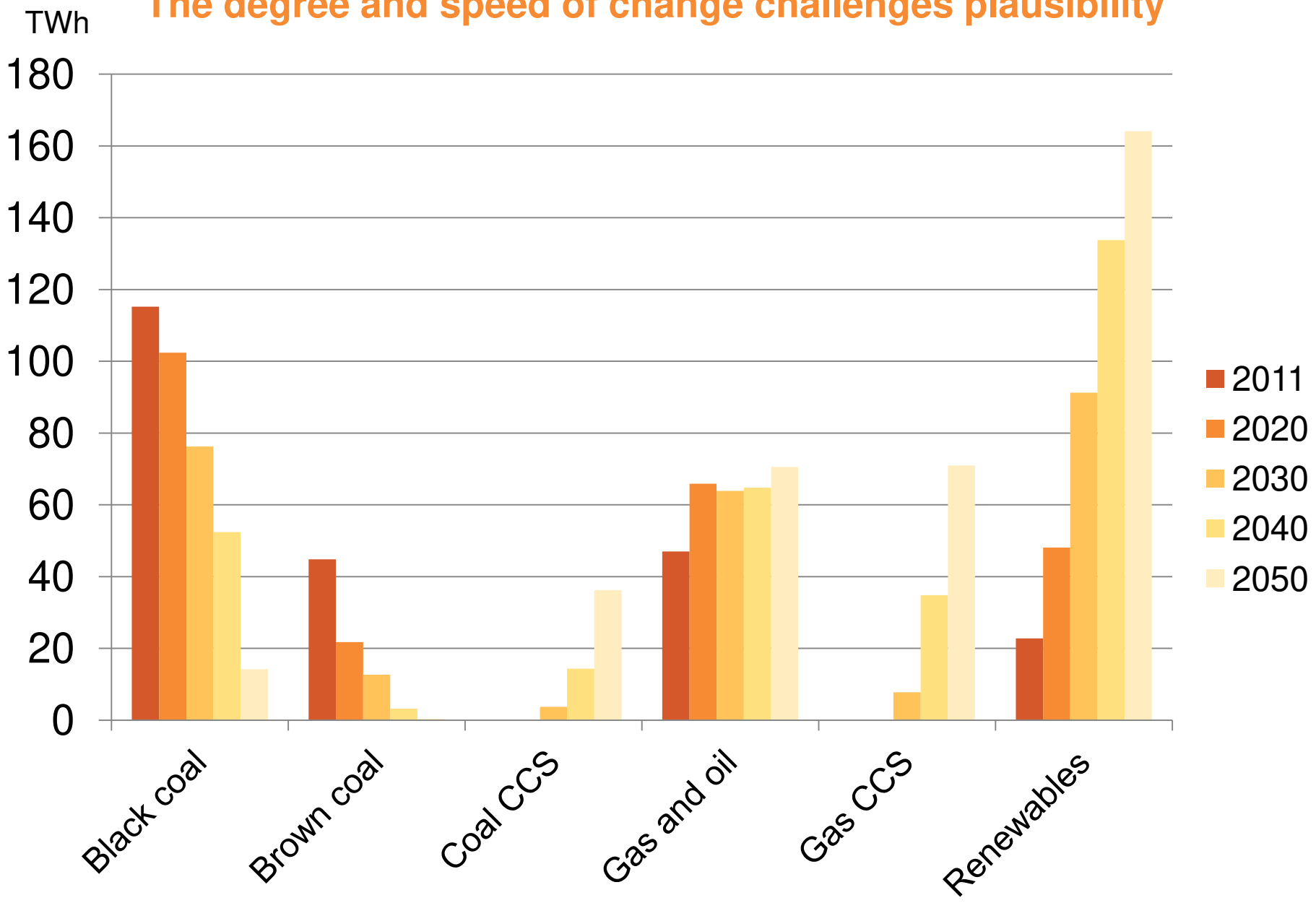
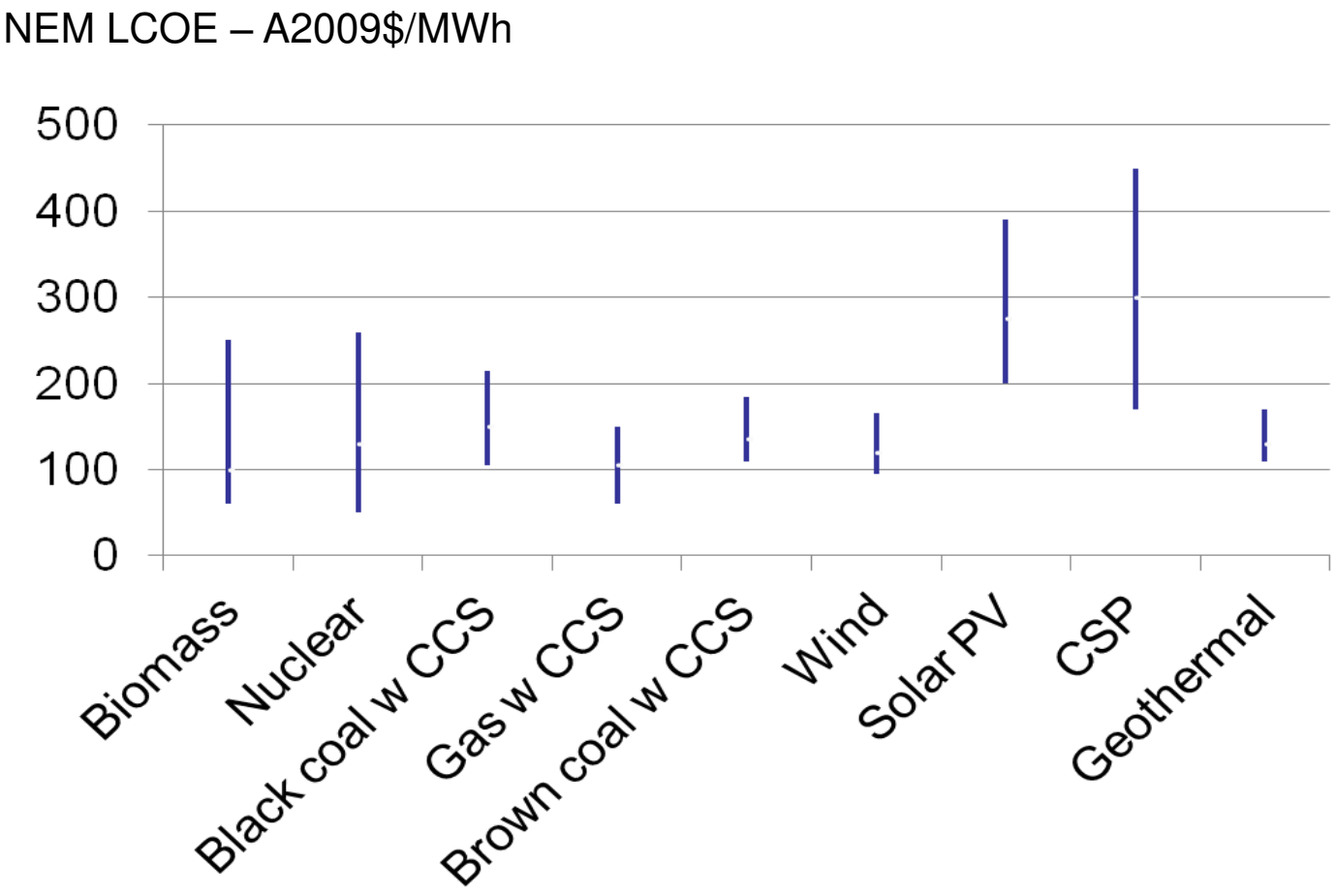
Outline

- The fundamental transformation
- Why government should intervene
- Principles for intervention
- Contracting for low-cost, low-emissions electricity
- Implications in the political context

The degree and speed of change challenges plausibility



Cost estimates are illuminating and unhelpful in 2015



Source: Grattan Institute from industry estimates

Summary of technology challenges and barriers

- Grid infrastructure: wind, solar, geothermal, bioenergy
- Grid integration: wind, solar
- Resource data: solar thermal, geothermal, CCS
- Regulatory framework: geothermal, CCS, nuclear
- Scale and finance: CCS, nuclear, possibly solar thermal

The need for intervention

- The challenge is to decarbonise Australia's electricity sector within forty years, whilst maintaining security of supply and affordability

- Despite current projections, None of the assessed technologies can produce power at a scale and at costs similar to today's electricity

- The ETS is a good start, but will not be enough, due to:

    - Government regulatory barriers, including transmission, subsidies for existing technologies and lack of public support

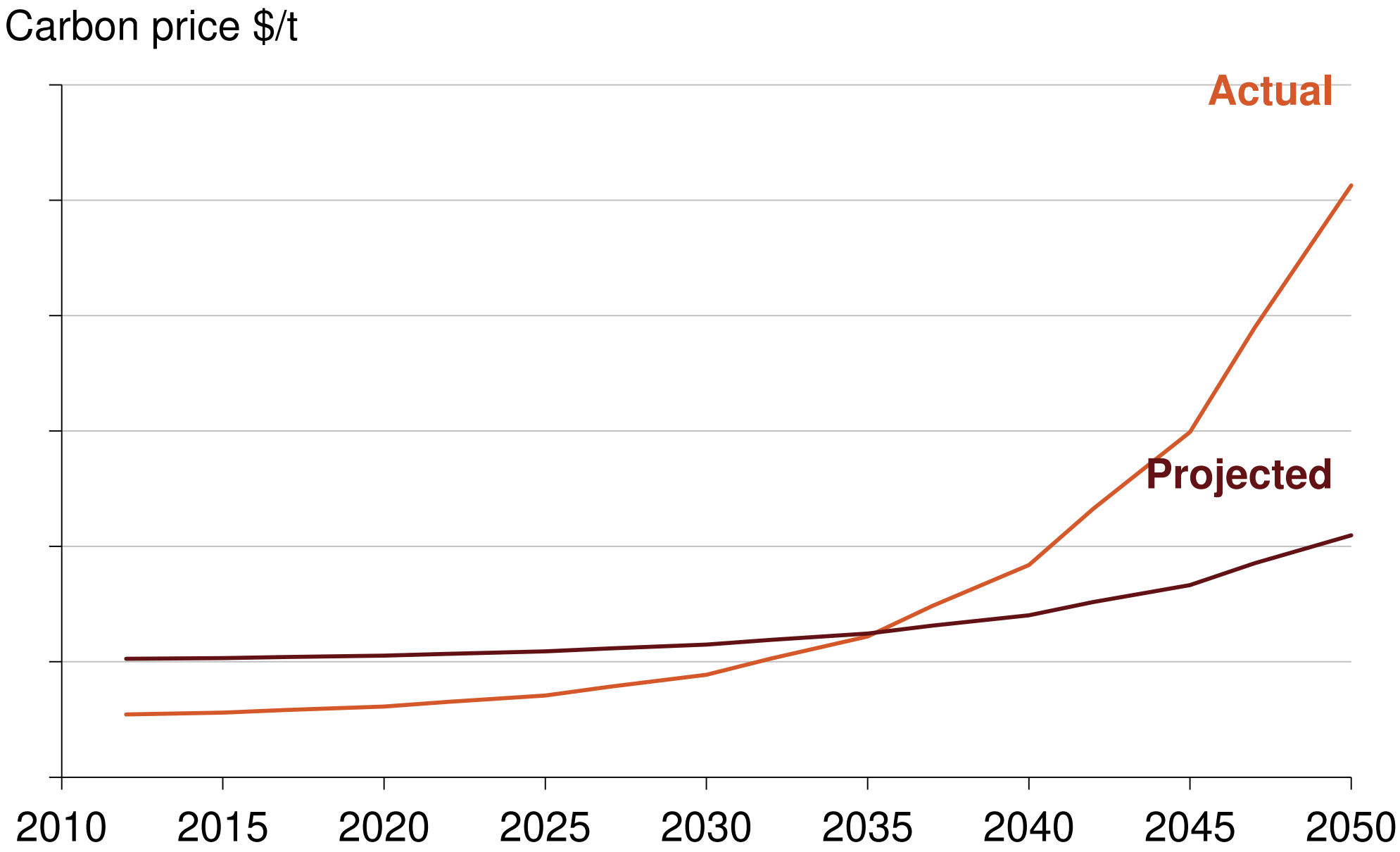
    - High costs and low returns:

        - Finance, minimum scale, resource data and regulation

        - No premium, carbon price discounting

        - Systemic under-pricing of carbon

The result: under-pricing of carbon and under-investment in technology



How government should intervene

- **Promote an efficient market**
  - Structure the emissions cap and trading scheme to minimise uncertainty
  - Map resources
  - Reduce existing subsidies
  - Reform network regulation
- **Support low emission technologies**
  - Research and development – national interest and comparative advantage
  - Demonstration and early deployment – support a variety of options
- **Address both carbon market and early mover technology risks**

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The core proposal:

- A series of auctions held every 6 months for 10 years
- Developers bid to provide power, and the lowest bid succeeds in securing a contract for delivered energy through a contacted strike price.
- Technology categories are initiated by government. Subsequently, success delivers more success as costs are reduced.
- The contract delivers two payments: one a guaranteed forward carbon price as a CfD, and the second as a premium on the wholesale price.

Why reverse auctions?

- Long-term contracts and forward market with price discovery.
- Developers must present with projects capable of being financed and minimal conditions precedent.

Assessment of the proposal

Effectiveness and efficiency

- Contract structure addresses both carbon market and technology spillover risk
- Frequent, competitive auctions deliver cost discovery
- Multiple safeguards against late or non-delivery

Portfolio of options

- Multiple categories
- Pre-defined rules that govern the categories over multiple rounds
- Developers incentivised to deliver projects viable in the market

Feasibility

- Complements the ETS
- Would also complement Direct Action

Predictability and flexibility

- Projects not selected ahead of delivery
- 10-year timeframe provides a stable, credible investment environment

The policy/political context

The emissions trading scheme

- Once emissions are capped through an ETS, there is no case for supporting technologies beyond addressing market failures and barriers.
- The role of the Renewable Energy Target

Direct Action

- The policy will use a form of tendering to establish an effective carbon price
- The policy, as understood, does not specifically address long term climate change policy risk or technology spillover risks. The reverse auction CfD can complement the DA policy.

Closing remarks

•There is great uncertainty regarding policy drivers for low emission demand and technology developments for supply

•Most of the current policy framework is a “dog’s breakfast

•The requirements of policy are credibility, flexibility and predictability.

•Clarity of objective is the first step and the rest of the policy framework should be based on addressing market failures once an emissions constraint has been introduced

•Governments need to address barriers and support R&D

•Driving innovative, low-cost technologies is a widely recognised problem.

•Governments should pay to develop a portfolio of options from which a proven set of technologies can emerge

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