Tools for an energy and carbon strategy

Client	Date	Location
DON Smallgoods	**2019 - 2020**	**Castlemaine, AU**

Don Smallgoods (DON), part of George Weston Food Limited, operates a large processing plant at Castlemaine that produces a substantial tonnage of processed meats. The Castlemaine site has relatively complex energy systems and is located on a constrained electricity feeder.

The goal

The Northmore Gordon team helped DON Smallgoods develop an integrated Energy Supply and Carbon Strategy for 2019-2030 taking into account:

- **Energy security**
- **Energy cost**
- **Operational complexity**
- **Ownership/Procurement options**
- **Carbon footprint**

The Challenge

Don Smallgoods (DON), part of George Weston Food Limited, operates a large processing plant at Castlemaine that produces a substantial tonnage of processed meats. The site has relatively complex energy systems including; boilers, gas-fired cogeneration, and large refrigeration systems, and is located on a constrained electricity feeder. Energy expenditure is significant, and energy security is critical to the operations.

Increasingly, the security and cost of energy supplies to manufacturers are subject to external factors such as global initiatives (e.g. the Paris Climate Accord), Eastern Australia's export natural gas industry, Government policies around gas exploration and reservation, electricity network regulation, climate change response, business growth plans, electricity grid constraints, and emerging energy technologies.

The absence of an overall energy supply and carbon strategy meant it was difficult to make informed decisions around the energy assets and future energy supplies. For example should they integrate bio gas with natural gas, or phase out gas completely over time? Are there benefits of an on-site solar system and what are the implications for investment in the cogeneration plant? What role do renewable PPAs have, and what risks are there?

Northmore Gordon was already working closely with the site on energy productivity under a long-term partnership program, and was chosen to assist DON plan their energy supply and decarbonisation journey.

The process

Northmore Gordon used a strategic framework that was underpinned with solid market, policy, and technical analysis.

Market Context

- Up-to-date analysis was completed on national and international policy, the Australian energy market, technology trends and implications for the site, and corporate policies.

Analysis

- Our Energy and Carbon experts developed a tool for modelling the financial, carbon and operational risks of different energy supply strategies and the impact over a ten-year timeframe.

Integrated Energy and Carbon strategy

- An integrated energy and carbon strategy was compiled, along with suggestions on carbon reduction pathways.

Stakeholder Workshop and Scenario Development

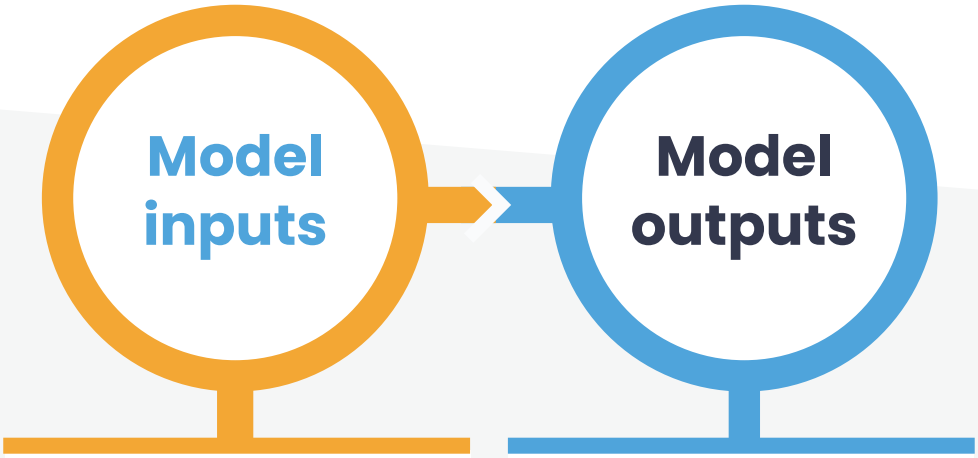
- Stakeholders were informed of the market context, policy drivers and technology trends.
- Several what-if scenarios were developed with Don's management team to allow options to be compared (e.g. how do you trade off improvements to energy security vs a rise in energy costs?).
- Collective agreement was obtained on what Scenarios were to be assessed.

Outcome

Northmore Gordon helped DON consider their 10 year carbon and energy goals, and developed a tool that can model energy costs and carbon emissions into the future. This tool helps DON make strategic decisions based on different scenarios that reflect changing conditions including markets, government policy, technology and other conditions; see below.

Northmore Gordon generated a set of four scenarios categories for DON as follows:

1. **Business as usual**
2. **Balanced change**
3. **Low carbon future**
4. **High resilience**



- Business growth rate
- Supply reliability target
- Energy efficiency plans impact
- Electricity, gas and carbon offset projected market price.

- Financial impact *(relative cost of energy, required CAPEX, NPC [net present cost])*
- Optimal employment settings for existing CHP plant
- Optimal mix of quantities of on-site CHP, on-site solar PV, purchased green electricity and purchased carbon offsets
- Level of grid dependence
- Quantity of carbon offsets required
- Reliability outcome.

Do you need help developing a decarbonisation strategy?

Take our quick health check to determine your Energy and Carbon Performance potential.