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Local low-cost, low-carbon energy for Parkes Shire Council: An Assessment Tool

The Institute for Sustainable Futures recently produced a draft Sustainable Energy Plan and Energy Option Assessment Tool for Parkes Shire Council (PSC). The drivers for the project were firstly that PSC's energy costs, already a significant proportion of their budget, look set to double by 2020. The second is the need, shared by Local Government's everywhere, to demonstrate leadership in the transition to low carbon energy supplies.

The project objectives were to identify local energy options which deliver significant financial and environmental benefits, and to give PSC a tool to examine the business case for each option in the light of changing conditions.

The current increase in energy prices Australia wide is strongly driven by network investment in electricity poles, wires and substations, and represents both a threat and an opportunity, with energy prices expected to double by 2020.

The project included:

> A situation analysis, reviewing existing energy spending, estimating prospective changes in electricity prices and the impacts on PSC's future budget;

> A workshop with key council and other stakeholders to present interim findings, explain the potential contribution of distributed energy options, and make decisions on which options to examine further;

> Development of a model to allow the user to revisit the business case as conditions change or firmer information is available, including a 25 year cash flow analysis, and

> Production of a draft Sustainable Energy Plan for consideration by the Council.

"It was refreshing dealing with professionals who were able to provide truly expert support and advice in such a fast moving area as local energy production. ISF delivered objectivity and reliability to Council's project along with those all too rare commodities, value for money and a quality product that exceeded our expectations. We expect to implement many of their recommendations in the next years." Brad Byrnes, Parkes Shire Council, 2nd May 2011

The technology options considered were:

> Cogeneration and trigeneration,

> Gas generators,

> Solar PV with and without Feed-in Tariff,

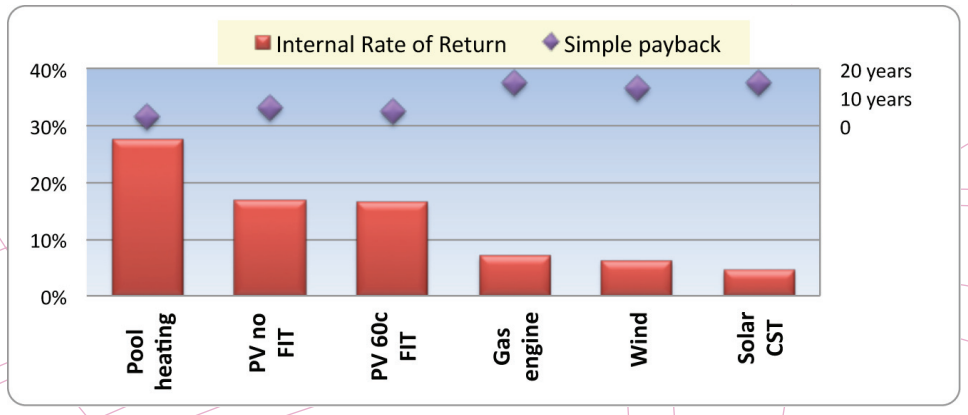
> Concentrating solar thermal generation,

> Wind energy,

> Demand management, and

> Energy efficiency to reduce peak power loads and overall energy consumption.

Energy options compared (internal rate of return and simple payback)



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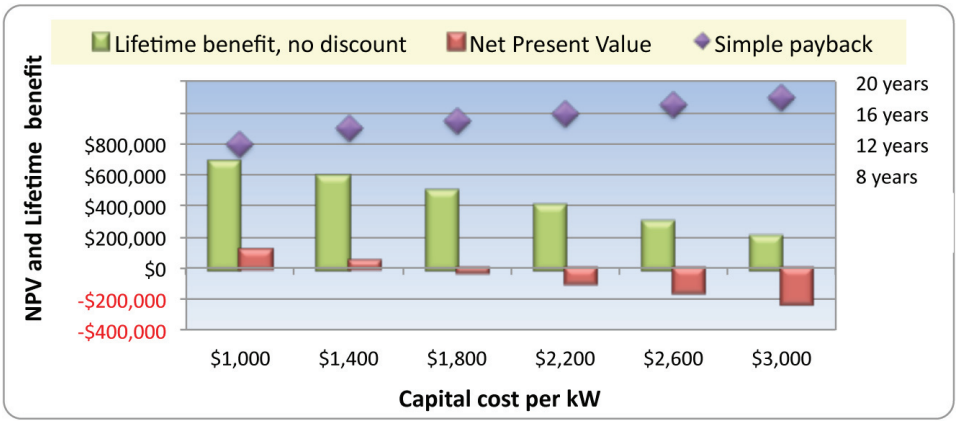
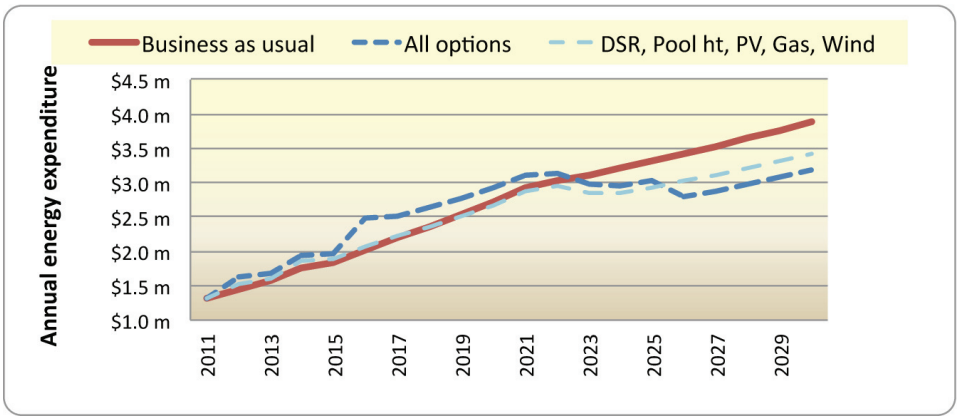
Energy Options Assessment Model

The assessment model includes a 25 year cash flow, and is designed so that PSC can revisit the business case as more precise information is obtained or conditions change. The model outputs include a comparison of the internal rate of return of the different energy options, a 'what if' analysis on capital cost, and the effects of each option on projected energy expenditure and greenhouse emissions. The model comes with context specific default information preset by ISF, but allows the user to easily change key factors such as interest rate, electricity cost, repayment period, capital cost and more.

Effect of capital cost on economics of a 160KW gas engine at a pump site.



Annual energy expenditure with various combined options



The project is expected to lead to real cost and emissions savings for Parkes Shire Council in the 2011-12 financial year and beyond.

ISF believes that in the face of a doubling of electricity prices over the next decade, other councils could similarly benefit from this proactive approach to local energy planning.

To find out more, please contact

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