Solar Water Heating As A Business Opportunity

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Energy Observations

Major transition period:

Era of cheap energy has now gone

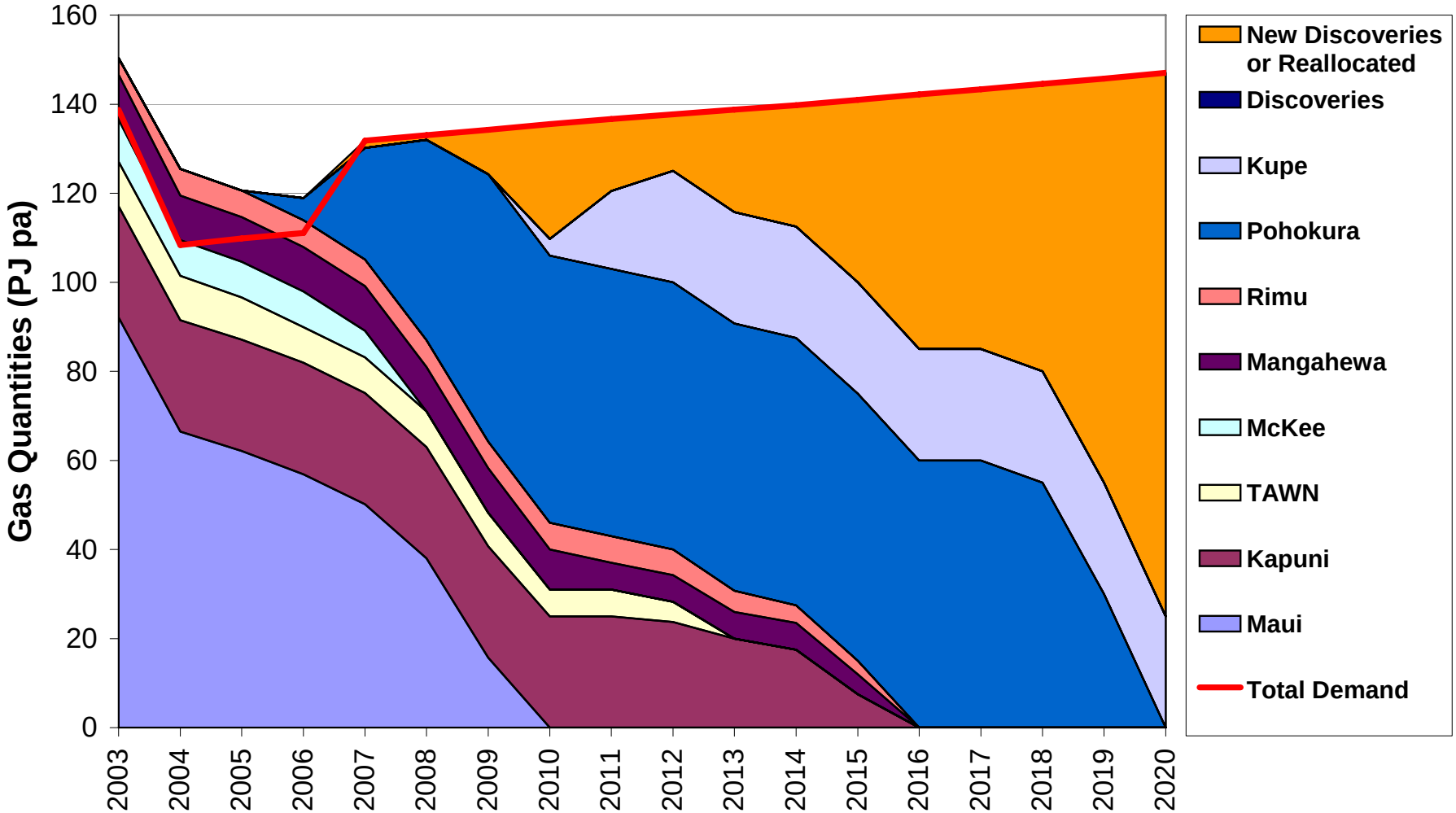
- especially with depletion of Maui gas field; very large, plentiful, and cheap
- number of energy intensive industries were set up to take advantage of cheap energy

- New and replacement energy is much more expensive
  - new gas, coal, geothermal, wind and hydro
  - more constraints on new projects than in the past
  - but we have many generation options in the longer term
- Energy market players on a step learning curve
  - new forms of contract
  - structural rigidities
  - customers incentivised to manage energy costs
  - opportunities for new players / activities

The Energy Market

- Disjointed and fragmented (generation & distribution)
- Supply driven (generators with a retail hedge)
- Lack of liquidity in electricity contracts
- Lack of availability of firm price contracts
- Many contracts have a % based on spot price
- Minimal retail competition
- Generators focused only on covering own contracted position
- Customers learning how to manage energy contracts
- Customers becoming cost conscious

Gas Supply and Demand Projections



Source: Ministry of Economic Development

Market Changes

- Government appointed Electricity Commission
- Network companies under price control
- Network companies can invest in more generation
- Electricity Commission contracting for reserve generation
  - Likely to:
    - cap prices at < 20 c/kWh
    - limit demand response
    - constrain innovation
- Renewed interest in distributed generation
- Strong Govt support for renewable energy and demand management

Electricity Generation Options

		C/kWh	MW	GWh/yr
Gas (C charge)	2005 - 25	6.5 - 8.5	900	7,500
Wind	2005–25	6.2 – 6.5 8.5	650 600	2,150 1,800
Geothermal	2005–25	6.2	600	5,100
Project Aqua (ex transmission)	2008–12	4.5	570	3,200
Other hydro	2005–25	8.5	280	1,350
Cogeneration		5.0 – 8.5	350	1,700
LNG (C charge)		9.0-9.8	no limit	no limit
Coal (C charge)	South Island North Island	7.5-8.6 9.4-10.9	very large very large	very large very large

Source: Ministry of Economic Development

Government Policy - Solar

- National Energy Efficiency and Conservation Strategy
  - Significantly improve the energy efficiency of residential heating systems
  - Accelerate development of the solar water heating industry
  - Development of a Home Energy Rating Scheme (HERS)
  - Crown Energy Efficiency Loan Scheme
- Renewable Energy programme
  - Partnership with Solar Industries Association
  - Solar Water Heating Action Plan
    - Target - 10,000 new systems per year
    - Market transformation
    - Quality standards - training, skills, accreditation, Code of Practice
    - Government purchase programme
    - Interim bid-in support fund
    - Effective public information
- Climate Change
  - Small /Medium enterprises programme

Solar Industries Association

- Solar water heating manufacturers and suppliers industry group
- Quality systems
  - Code of Conduct and Responsibility
  - Accreditation for manufacture or supply
  - Certification for installation
  - Establishment of manufacture and performance standards
- Collective promotion
- Partnership with Government to grow solar water heating
- Target installation of 10,000 new systems per year by 2005

  (8-10 fold increase)

Design

- Systems can be installed on new or existing buildings
- Economics improved if the system is designed into the building
- Aesthetics
  - Blended profile
  - Location
- Best performing and cheapest system is a simple system

Commercial and Industrial Applications

- Motels / Hotels
- Resthomes
- Motor camps
- Institutions (hospitals, hostels, prisons etc)
- Industrial hot water (freezing works, dairy factories

❖ Often used as a preheater to other heat generators

❖ Heat from solar can be supplied at 4-5c/kWh cf coal and gas at around 4c/kWh

Accreditation

- SIA administers an industry accreditation scheme
- Accreditation is performance based
- Accredited SIA members are encouraged to use the logo

- The public are e[illegible] urchase only from an accredited SWH supplier

Code of Practice

- EECA and SIA have prepared a “Code of Practice for Manufacturing and Installation of SWH Systems in NZ”
- The industry is focusing on performance based quality systems
- Code is also to give assurance to SWH system purchasers on what they are buying and how it should be installed
- Code is openly available on the website
- Code covers building structure and building permit requirements which have been unclear until now

Installation

- Shortage of skilled installers
- Few problems with product, any problems generally relate to installation
- Some suppliers use only in-house installers to ensure quality, others draw on strengths of local plumbers
- Certificate for SWH Installation
- Working with Plumbers Training Organisation to upskill plumbers knowledge of solar water heating systems
  - Apprenticeship
  - Up-skilling registered plumbers
- Need to develop working relationships between suppliers and installers
- Opportunity for plumbers to expand their business