

The Treasury

Solid Energy Information Release

May 2013

Release Document

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- [1] 9(2)(a) - to protect the privacy of natural persons, including deceased people
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- [3] 9(2)(f)(iv) - to maintain the current constitutional conventions protecting the confidentiality of advice tendered by ministers and officials
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In preparing this Information Release, the Treasury has considered the public interest considerations in section 9(1) of the Official Information Act.



SOLID ENERGY
Coals of New Zealand

9 June 2010

Hon. John Key
Prime Minister of New Zealand
Parliament Buildings
Wellington

Dear Prime Minister

Further information requested on an integrated National Resources Company

Further to our letter of 12 May please find attached the additional information requested.

Previously we provided and discussed our Business Plan to expand Solid Energy's current scope as an integrated National Resources Company ("NRC") to accelerate resource development and achieve maximum value for NZ, with three primary objectives:

1. Accelerate development to achieve a major economic step change
2. Capture the maximum possible value for New Zealand
3. Meet New Zealanders' expectations for protection of our environment and national brand.

We agreed to provide a detailed analysis of the strengths and weaknesses, benefits and risks of our NRC proposal, broken down by resource areas to allow the interdependencies between areas and the merits of a fully integrated approach to be considered relative to a similar approach but with more narrowly defined scope of business (such as a new National Oil Company, "NOC"). This analysis (attached) includes:

- Assessment of NRC against other options to create a similar economic step change
- Benefits and issues associated with each option: timeframe, cost and impediments to full scale implementation, capability (governance, executive, technical, project development, systems), industry position and knowledge, access to production, upgrading & conversion technologies and partner capability, access to markets, synergies within portfolio, ease of access to external capital on broad or project basis, and regulatory, trade, commercial and political issues and risks.

In particular it considers the relative merits of a National Oil Company (NOC) and integrated National Resources Company (NRC) in achieving the goals above, and whether expanding Solid Energy's scope as an integrated National Resources Company is an effective option.

This analysis has a clear conclusion:

An NRC based on Solid Energy's existing integrated natural resources business provides, by far, the best outcomes for New Zealand against almost every objective.

I trust this provides the further information requested by you and your colleagues.

Regards

John Palmer
Chairman

cc Hon Bill English, Minister of Finance
Hon Gerry Brownlee, Minister of Energy and Resources
Hon Simon Power, Minister for State-Owned Enterprises

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Prepared by Solid Energy, June 2010

O&G OPTIONS? NATIONAL OIL COMPANY (NOC) vs INTEGRATED NATIONAL RESOURCES COMPANY (NRC)

Solid Energy is an integrated natural resources company operating across the mining and energy sectors in minerals, renewables and non-conventional petroleum liquids and gas. Exploration and characterisation capabilities are common across most of these resources. Solid Energy uses a range of process and conversion technologies to supply end products, from coking coal to solid, liquid and gas fuels, to energy markets in NZ and internationally.

Assessment	Benefits	Low					High
Method	Costs & Risks	High					Low

Meeting the key objectives for NZ natural resources development

CONCLUSIONS

- *Limited government participation* minimises risk but also minimises benefits. A modified existing regime is unlikely to capture significantly more value for NZ.
- *Active government participation* substantially increases value and benefits for NZ.
- Co-investment with the private sector can occur under any National Oil Company or Natural Resources Company option. NZ value is maximised if the NOC/NRC has initial control.
- **An integrated national Natural Resources Company maximises NZ benefits and minimises risks.** Other active participation options, including a stand-alone National Oil Company (with or without an expanded Solid Energy), lack synergies, scale, speed and integration and so have fewer benefits and higher risks.

CONCLUSIONS

- The *scope of business* for typical O&G companies has changed significantly since the 1980s with changes in resources and markets. Non-conventional O&G capability, especially in *conversion technologies*, gives integrated O&G companies and NRCs significant advantages over NOCs today.
- A new NOC would struggle to develop beyond basic conventional capabilities and would probably need partners for all but routine exploration activities.
- Solid Energy already has significant *core and non-conventional O&G capabilities and conversion technologies*, and all other governance and support capabilities. **Building from this base is the easiest and least risk option to accelerate O&G development and capture maximum value for New Zealand.**

Business Scope & Capabilities		O&G Company Objectives			NZ Options	
		Typical NOC (1980s)	Typical NOC (today)	Typical IOC (today)	New NOC (2020s)	Solid Energy (2020s)
Governance and Support Services	Board					
	CEO					
	Senior Executives					
	Health & Safety					
	Human Resources					
	Legal					
	Financial					
	Systems					
Conventional O&G Operations	Infrastructure					
	Seismic Interpretation					
	Economics EMV/Risk					
	Exploration Drilling					
	Partners/JVs					
	Commercial					
	O&G Production					
	O&G Sales and Marketing					
Non-Conventional O&G Operations	International Liquids Knowledge					
	Local Gas Knowledge					
	LNG Import/Export					
	Coal Seam Gas					
	Shale Gas					
	Lignite Gasification					
	FT/MTG					
	CCS					
Renewable Energy	Thermochemical Processes					
	Hydrogen - Fuel Cells					
	Chemical Production (eg. Urea)					
	Methane Hydrates					
	Syngas					
	Biomass Gasification					
Other	Biomass Thermal					
	Biomass Enzymatic					
	Bio Oils					
	Solar PV					
	Algae					
	Carbon Emissions and Trading					
Other	Climate Change					
	NZ Government Relationships					
	NZ Permitting Regime					
	NZ Specific Regulations (RMA)					

Strategies	Energy Strategy					Mining Strategy					
Markets	Liquid Fuels, Gas & Chemical markets					Steel and Metals Markets					
Products	Non-Conventional Petroleum Liquids & Gas					Stationary Energy					
	Solid Fuels					Coking Coal		Other Minerals & Products			
Technology	Conversion & Process Technologies										
Exploration	Geology & geophysics, Resource characterisation, Exploration drilling										
Production	Production drilling, Mining, Logistics										
Resource	Oil & Gas	Methane hydrates	Shallow Gas	CSG, UCG	Biomass	Lignite	Thermal coal	Coking Coal	Iron Sands	Silica	Other minerals

Solid Energy's core business has three logical expansion steps:

- **Methane hydrates:** unconventional oil & gas resources requiring exploration and production processes and conversion technologies similar to Solid Energy's core CSG, UCG and conventional mining capabilities.
- **Conventional oil & gas:** Solid Energy already has most of the capability required for *conventional oil & gas*, as shown in the previous column.
- **Iron sands, silica & other minerals** Solid Energy's core mining and processing capabilities and international steel market relationships are readily extended and applied to iron sands and other minerals, particularly silica for the high grade silicon metal market.

Business objectives for an integrated national Resources Company to accelerate NZ's natural resource development with maximum value and minimum risk for the Government and New Zealanders are summarised below.

Business Objective	Least Effective Outcome	Most Effective Outcome
Speed of implementation	Slow implementation while recruiting people & developing new systems	Established systems and people
Robust governance Credible management	New Board and management, strategy, policies & systems to be developed	Established Board and management, known strategy, policies & systems in place
Attract best people	No initial credibility, less initial job specialisation	Existing credibility, job specialisation
Scale	Sub-scale cos, duplicate structures & capability	Single company, world-class resources capability
Business Synergies	Multiple companies, minimal ability to share & optimise capability, market/partner relationships	Related businesses sharing capability, services, technologies, market/partner relationships
Investment allocation	Narrow focus, limited options, risk averse	Broad merit order of opportunities
Stable earnings and ability to attract funding	Standalone companies in multiple sectors and markets with exposure to volatile earnings	Ability to manage volatility and risk across multiple sectors and markets
Ability to attract the best partners	New company without established track record or credibility	Significant existing company with track record in resources and developments

An NRC based on Solid Energy's integrated natural resources business offers the best outcomes for almost every objective.

SOLID ENERGY: INTEGRATED NATIONAL RESOURCES COMPANY

Our current capability and track record

- Demonstrated stewardship of New Zealand's natural resources and environment
- Already an integrated natural resources company across the energy and mining sectors
 - Coal and other minerals for energy and steel markets
 - Renewable energy
 - Non-conventional petroleum liquids & gas: biofuels, coal seam gas, underground coal gasification
- Strong existing governance, management, corporate and support functions
- Major holder/owner of natural resource assets and rights
- Strong operational capability in exploration and production across all resource segments
- Strong project delivery capability
- Established leader in development and application of non-conventional processing and conversion technologies
- Strong New Zealand relationships with key national, regional, local and iwi stakeholders and international relationships with global leaders in production, technology and markets

Our value proposition as an integrated National Resources Company

- Immediately scalable from existing capability with immediate global access to additional specialist capability in exploration, production, technology and markets
- Most rapid option for development of full revenue from existing and new resources
- Proven capability to manage growth in diverse and complex businesses
- Complete value chain management and capture for the shareholder - from the resource to the customer
- State owned entity that "thinks like Government" and "acts like a corporate" - positioned to add significant value through existing international relationships at government to government level
- Proven ability to optimise capital investment and management - already highly attractive to international capital investors - positioned to manage FDI for maximum NZ value

Conclusions

- New Zealand has a number of world class natural resources - these require a world class strategy to accelerate their development and maximise value for New Zealand
- The international model for maximum success is moving rapidly away from conventional single focus resource companies and strongly towards integrated resource companies such as BHP Billiton, Rio Tinto, Vale, XStrata, Anglo, Shenhua, Peabody, Origin, Statoil and Shell.
- A BAU or modified BAU approach with limited government participation will minimise risk but also minimise benefits
- Active government support for an integrated national resources company maximises value and benefits for NZ, and among active options has lowest risks in most areas
- Conversion technologies will be increasingly critical to maximise value from NZ's resources - in addition to controlling the value chain for NZ resources we can secure a global leadership position in key technologies
- NZ has the opportunity to create a global scale integrated natural resources company owned by New Zealanders, similar to what has been done by other countries. The Government working together with Solid Energy provides the best path to achieve this opportunity

Next Steps

- Confirm Solid Energy's expanded scope to an integrated national natural resources company (NRC): aggressively advancing existing resource developments, building world class capability, acquiring and developing new resources and developing and applying conversion technologies to maximise resources value for New Zealand.
- Provide seed capital (through retained earnings and vesting of related crown assets) to support aggressively accelerated growth, and support Solid Energy accessing additional external capital.
- Consider taking other measures to reduce unnecessary value loss to New Zealand and unnecessary risk to NRC.

NEW ZEALAND'S NATURAL RESOURCES OPPORTUNITY

Prepared by Solid Energy, June 2010

Global Drivers

- Global population growth, rising aspirations in emerging economies, strong link between economic growth and demand for resources and energy
- Resource depletion and higher production costs
- Increasing prices and superprofits
- Component share of world hydrocarbon reserves:
 - Oil: 20% of total - decreasing fast
 - Gas: 20% - decreasing
 - Coal: 57% - increasing
 - Non-conventional oil: 3% - increasing fast
 - Total: 100%

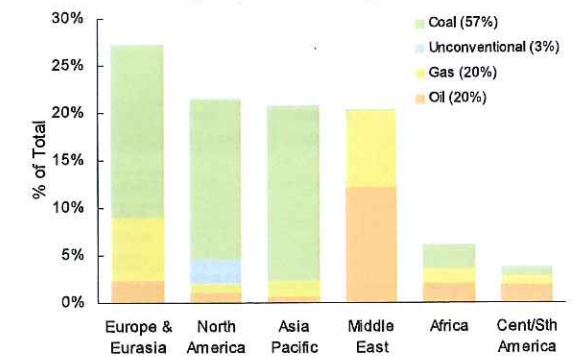
Industry Trends

- Conventional oil scarcer, harder and more costly
- 80%+ of proven oil reserves now under the control of national oil companies or national resource companies
- Non-conventional O&G and coal increasingly substituting for conventional O&G
- Conversion technologies increasingly critical
- Decreasing role for traditional O&G companies
- Increasing importance of integrated resource companies for scale, resource development flexibility, investment optimisation, conversion technology capability and market rationalisation

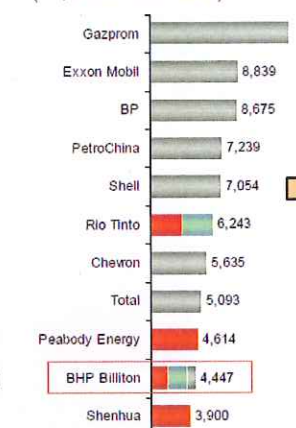
New Zealand's Resources

- NZ's natural resources are the world's richest per capita and offer NZ a sustained economic competitive advantage
- Value is from import replacement (increasing security of supply) and exports to major Asian growth markets
- Conventional O&G will decrease and be replaced by unconventional O&G and other resources
- Conversion technologies will be increasingly critical for our unconventional resources: deep thermal coal, lignite, iron sands and methane hydrates - NZ can secure a global leadership position in conversion technologies in all these unconventional resource areas
- To achieve this resource value and position NZ needs to maximise sovereign ownership and control of these strategic resources

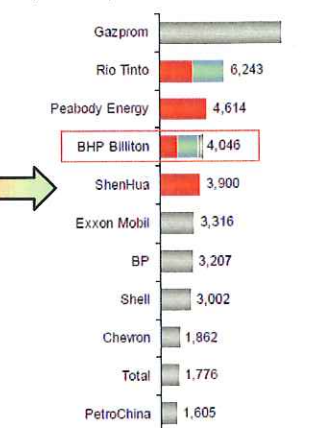
World hydrocarbon energy reserves



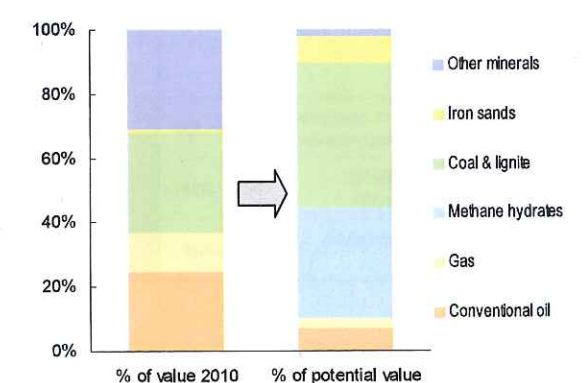
Leading energy companies (PJ, Production 2008)



Leading Energy Companies (Less Oil)



NZ Resources



Key Questions:

1. What is the best option to accelerate resource development and achieve maximum value for NZ?
2. What are the merits of a National Oil Company (NOC) and integrated National Resources Company (NRC)?
3. Is expanding Solid Energy into an integrated National Resources Company an effective option?