



## Joint Report: Solid Energy's Proposal for Natural Resources Ltd

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<b>Date:</b>	7 May 2010	<b>Report No:</b>	T2010/784
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### Action Sought

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	Action Sought	Deadline
Prime Minister (Hon John Key)	<b>Read</b> before meeting on 10 May 2010	10 May 2010
Minister of Finance (Hon Bill English)	<b>Read</b> before meeting on 10 May 2010	10 May 2010
Minister for Economic Development (Hon Gerry Brownlee)	<b>Read</b> before meeting on 10 May 2010	10 May 2010
Minister for State Owned Enterprises (Hon Simon Power)	<b>Read</b> before meeting on 10 May 2010	10 May 2010
Associate Minister of Finance (Hon Steven Joyce)	<b>Note</b> contents of report	None

### Contact for Telephone Discussion (if required)

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Name	Position	Telephone	1st Contact
John Crawford	General Manager, Crown Ownership and State Sector Performance	[Withheld s9(2)(a)]	✓
Chris White	Advisor, Policy Advisory Group, DPMC	[Withheld s9(2)(a)]	
Peter Crabtree	Director, Energy and Communications Branch, MED	[Withheld s9(2)(a)]	

### Minister of Finance's Office Actions (if required)

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None.

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**Executive Summary**

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Solid Energy have pitched an audacious (their language) vision for a majority state owned, diversified, natural resources company (Natural Resources Limited or NRL). They propose that the company should enjoy preferential rights of access to NZ's hydrocarbon and mineral resources across all areas of its business, requiring significant changes to regulatory regimes. NRL would be built on top of Solid's existing business and would retain all earnings to fund capex. Over time, private interests would be able to buy into the business at either, or both, of the project level (JVs, project finance, IPO) or the parent level (IPO). Solid argue that such a company could drive a step change in NZ's economic performance.

Solid propose that NRL's business should span coal mining, lignite conversion to higher value products (e.g. urea and diesel), non-conventional gas mining from coal resources, conventional oil and gas exploration and production, iron sands mining and steel production, and methane hydrates exploration and production.

The scale of investment required and the change in policy settings to bestow preferential access raise significant questions and concerns.

Officials' preliminary view is that Solid already has the capability and mandate to develop projects around its core competency and assets (coal, lignite, non-conventional gas), and that government's role would be limited to investment decisions based on major business cases, and tidying up some aspects of the current permitting regime. A change in policy which allowed private interest into the business would ensure more rigorous scrutiny of projects and sharper performance incentives.

On Solid's proposals around oil and gas exploration and development, mineral extraction and steel production, and methane hydrate prospecting, officials have three main concerns: providing Solid with preferential access would freeze out competition and chill inward investment in these sectors as well as probably breach international trade agreements; Solid has no particular existing advantage in these sectors and would face a massive challenge to build (buy) the necessary capability quickly; and existing ownership structures are unlikely to ensure top-level performance over time.

We note that there are existing work programs in train (petroleum plan and royalty regime, that address some of the issues Solid raises.

## Recommended Action

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We recommend that you:

- a. **indicate** in principle support for the projects currently in Solid's business plan and a willingness to allow Solid to withhold dividends, subject to detailed assessment of each major business case by the shareholder prior to investment;
- b. **indicate** that preferential access to permits will not be granted, but that further work could be commissioned on tightening up existing permitting regimes where resources are not being developed;
- c. **indicate** that Ministers are considering their appetite for greater investment of risk capital in oil and gas exploration, [Withheld s9(2)(i)]  
but that it is not immediately clear what advantage Solid enjoys in this area; and
- d. **move** SOE ownership policy forward to improve access to capital and incentives for performance.

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Crown Ownership &  
State Sector Performance  
for Secretary to the Treasury

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Advisor  
Policy Advisory Group  
DPMC

Peter Crabtree  
Director  
Energy & Communications Branch  
Ministry for Economic Development

Hon John Key  
**Prime Minister**

Hon Bill English  
**Minister of Finance**

Hon Gerry Brownlee  
**Minister for Economic Development**

Hon Simon Power  
**Minister for State Owned Enterprises**

Hon Steven Joyce  
**Associate Minister of Finance**

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### **Purpose of Report**

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1. Senior Ministers (PM, Hons English, Brownlee, Power and Joyce) are meeting with Solid Energy's Chair, John Palmer, and Chief Executive, Don Elder on Monday 10 May. Solid will be pressing for an immediate and concrete reaction and clear direction from Ministers about whether/where to continue work.
2. At a high level, this note sketches Solid's rationale and proposals and comments on both, including discussing opportunities and risks and examining some alternatives.

### **Analysis**

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#### **Solid's rationale**

3. Solid's approach would turn policy on its head in a number of areas. It would significantly expand the state's role in the productive economy, end (or significantly dampen) the competitive market for hydrocarbon and mineral resource allocation, and increase the risk profile of the Crown's balance sheet. A number of key assumptions underpin Solid's rationale for such radical change:
  - The world is entering a transition period between traditional fossil fuels and yet to be developed renewable technologies, during which very high returns (super profits) will accrue to those able to exploit a range of natural resources that New Zealand enjoys in abundance. Post the transition, these resources will decline in relative value.
  - To capture these returns, New Zealand must own the exploration, production and marketing processes, not just receive a royalty for the resource alongside a stream of corporate tax payments. Solid sees a first right of refusal for NRL as a critical piece in achieving this ownership.
  - Economies of scale will accrue to NRL (even as a much diversified company).

We comment on this rationale below.

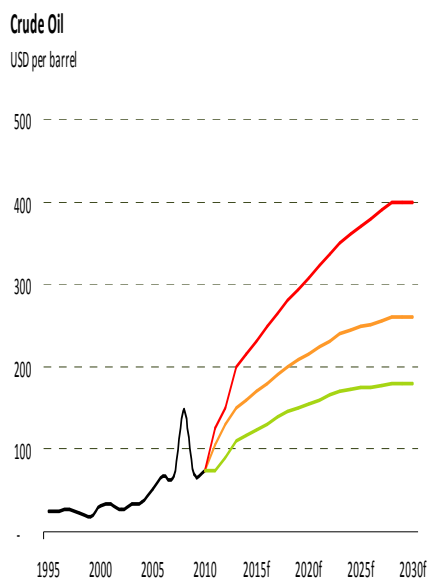
#### **Officials' overarching comments**

##### ***Price paths***

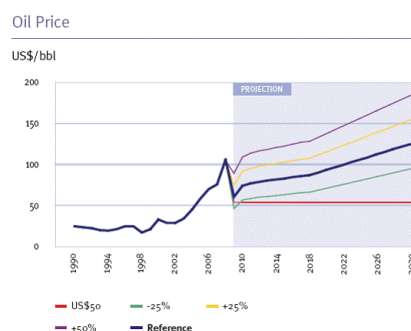
4. Officials (MED) share Solid's view of a rising price path for the kind of resources contemplated here. It's also abundantly clear that resources enjoy periods of super profits – vivid examples being oil immediately prior to the GFC and coal and iron ore as China's economy grows. However, Solid's price paths are off the bullish end of the chart – using MED's projections would lead to quite different views about the risk/return profile of projects. Indeed, Solid itself notes that many of their proposed projects would be only marginally economic if conventional price paths are followed (MED and International Energy Agency). Given that the investments will only be economic at prices above those predicted by market

experts, one would need to be convinced that Solid's view was correct before committing to their programmes.

## Solid



## MED



## Capturing value

- Ownership is one way that NZ could capture the value from NZ's resources (subject to the discussion below about company performance). But it is not the only way and brings risks – a well designed royalty regime offers an alternative (explored in more detail in the oil and gas section of this note).

## Ownership issues

- Aspects of this proposal suggest that it is not the best way to ensure New Zealand gains the greatest value from its resources – both the natural resources in question and the Crown's investment in Solid. Firstly, the essence of a competitive allocation process is to ensure the resource is allocated to the party who can gain the greatest commercial return from that resource. Secondly, preferential access to resources will remove competitive pressure from NRL, which is likely, over time, to result in less efficient operations. Thirdly, state ownership will exacerbate this problem – shareholding Ministers and their advisors will find it hard to judge the merits of investment opportunities, and are unlikely to place the board and management under effective scrutiny.
- Further, NRL is projected to need levels of capital well beyond that which a fiscally constrained Crown can responsibly provide.
- So, for reasons of performance incentives and access to capital, we would not recommend proceeding with any of Solid's significant proposals unless there is also an appetite to bring private sector interests into the business in a relatively short timeframe.

### ***First right of refusal issues***

9. Solid describes the first right of refusal to permits as “the key commercial enabler” in its proposal. Yet this component of the proposal, perhaps more than any other, needs careful consideration by Ministers.
10. We have discretely sounded out the international team at Treasury on international trade implications. The high level response is that the right would probably breach treaty commitments in the investment chapters of some of our existing FTAs (China, Singapore, Thailand, ASEAN) and prospective FTAs (TPP, GCC, Hong Kong, Korea and Australia).
11. In particular the “national treatment” obligation would be tested. The obligation does not require domestic and foreign investors to be treated identically, but it does require foreigners to be treated as well as the most well treated domestic investor, which in this case would be NRL with its first right of refusal. The advice comes with a strong caveat that the details matter, and we haven’t shared any details – further testing with Treasury, MFAT legal and possibly Crown Law would be necessary before any decision to proceed.
12. Even if the first right can be made to work under our international obligations, Ministers will want to consider the impact on our reputation, and on the incentives for companies to continue to invest in New Zealand. The latter is particularly important – for example at \$500m-\$1bn of investment over 3-5 years, NRL would still be a fraction of the oil and gas market, so we will continue to need technology, know-how and capital from private sector players. Similar dynamics would play out in other sectors.

### ***Capability and scale issues***

13. NRL would be a very different company from Solid – much bigger and more diversified. It would need whole tranches of new, specialist capability, may well need a new chief executive and even a new board. Solid recognises this, but buying in such capability in short order is a massive challenge. Linked to capability are issues of economies of scale. While there are potential economies at the operational level – for example lignite gasification is an input to both the urea and diesel processes, and underground coal gasification might provide the energy input for a steel mill – it’s less clear that similar economies exist in terms of capability across such diverse areas of operation, which suggests that the sectors can be considered separately and the alternative of having multiple companies, each focussed on a particular sector or set of opportunities, is an option that could be explored if Ministers want to proceed with the approach proposed by Solid. Further, if the government wants to invest directly as a means of accelerating development of any of the sectors contemplated, there are other private sector players that are well ahead of Solid in terms of capability.
14. The following two sections break down Solid’s plan into its constituent parts and provide commentary on each, including in some cases alternatives.

## Case by case assessment of projects already in Solid's business plan

Project	State of play	Officials' assessment of capex & risk	Government action requested by Solid	Officials' comments
Lignite to briquettes	<ul style="list-style-type: none"> <li>Demonstration plant 2011</li> <li>Full production 2014</li> </ul>	C = \$ R = ●	<ul style="list-style-type: none"> <li>Consenting process given national significance – call in at the very least</li> </ul>	The first stage of the lignite programme (briquettes) is believed to be well within Solid's existing capabilities (financial and otherwise) and does not require much (if anything) in the way of government actions to proceed.
Lignite to urea	<ul style="list-style-type: none"> <li>Joint concept study with Ravensdown underway</li> <li>Feasibility study Dec 2010</li> </ul>	C = \$\$ (c\$3b) R = ●	<ul style="list-style-type: none"> <li>Enforcement of existing permit work programmes – L&amp;M has permits that complicate development of the Gore mine</li> <li>Clarification of CCS regulations</li> </ul>	The remainder of the program is ambitious and is of an order of magnitude larger across the dimension of scale and overall risk. If these two projects were implemented in full, they would more than triple Solid's current revenue and production. The projects are likely to bring at least two new joint venture partners into the business and will also likely require significant new equity.
Lignite to diesel	<ul style="list-style-type: none"> <li>Pre-feasibility study complete late 2010</li> </ul>	C = \$\$\$ (c\$8b) R = ●	<ul style="list-style-type: none"> <li>Legislate/regulate for first right of refusal (FRoR) over all CCS permits</li> <li>Allocation of free CO2 credits under the ETS</li> </ul>	The urea and diesel proposals also rest on assumptions that carbon emissions can be cost-effectively managed through carbon capture and storage (CCS) or other new technologies, which is not yet proven.
Underground coal gasification	<ul style="list-style-type: none"> <li>Pilot underway</li> <li>First gas later this year</li> </ul>	C = \$ R = ●	None	These are both relatively low scale and low risk projects which would appear to be within the existing scope, mandate and capability of the company to progress.
Coal seam gas	<ul style="list-style-type: none"> <li>Gas production anticipated by end 2011</li> </ul>	C = \$ R = ●	None	

**Risk:** ● = Low ● = Medium ● = High

**Capex:** \$ = Low \$\$ = Medium \$\$\$ = High

## Case by case assessment of new projects

### **Conventional oil and gas** (C = \$\$ R = ●)

15. The proposition is to establish an oil and gas division within NRL. As a variant on the McDouall Stuart proposal, Solid Energy express interest in the Genesis Energy (31%) stake in the Kupe JV (book value of \$450m [Withheld s9(2)(i) , s9(2)(b)(ii)] . The Kupe asset would provide strong 'free' cash-flows. They also propose that other SOE upstream interests (e.g., petroleum permits) be consolidated within the NRL. It is unclear where further capital would be sourced in order to build sufficient scale and fund an ambitious exploration programme (\$500m - \$1b over 3-5 years).
16. The oil and gas division would be given preferential access to acreage through a first right of refusal. It is unclear whether the company would be given concessionary terms or, alternatively, whether blocks would be offered and the NRL would simply be given the opportunity to meet the best bid. Solid argue that holding rights to the most prospective acreage and managing the farm-in of other participants provides NZ Inc with strategic control of the development of its resources and reduces speculative activity that may not lead to more active exploration.

### **The petroleum sector**

17. Currently the petroleum sector accounts for around \$3 billion per annum of New Zealand's export revenue. Should the estimated resources in our unexplored basins be developed, this could increase to \$30 billion per annum in export revenue by 2025. Crown receipts alone could increase to more than \$10 billion per annum over the next 40 years.
18. As a general comment, it is worth emphasising that E&P investment requires significant scale and the ability to manage uncertainty and risk in a sophisticated way. Much of New Zealand's resource potential is in unexplored frontier basins, harsh deepwater environments and carries associated geological, technological and commercial risk. Even the largest international oil companies only target a fraction of their portfolios towards such high-risk / high reward investments. The costs and risks of development are typically spread between multiple JV partners and some companies are sought after for their expertise in frontier offshore environments (the Anadarko example). Attracting large amounts of the right type of expertise and international capital on competitive terms are key to this.

### *Petroleum Action Plan*

19. The Government has a Petroleum Action Plan aimed at maximising returns from petroleum resources – with a particular focus on ensuring New Zealand is a highly attractive global destination for petroleum exploration and production investment.
20. Work last year focused on developing a sound understanding of the prospectivity of the resource, modelling commercial thresholds (scale and type of development) and seeking independent review of existing policies (such as fiscal and regulatory terms). Current work is concerned with the question of what it will take to accelerate the tempo and scale of development and ensure that New Zealand captures the returns from this.



21. It is clear that there are areas where the Government can sharpen incentives, ease barriers to development and pursue a more aggressive commercial approach.

*Fiscal terms – staying competitive and capturing the upside*

22. MED is currently modelling different royalty and resource rent regimes for New Zealand petroleum basins. The aim of the modelling exercise is to find a fiscal regime for petroleum that incentivises exploration and development of New Zealand's petroleum resources, encourages the development of marginal fields in order for New Zealand to gain income tax, and ensures that New Zealand gets a fair return of super profits. This modelling includes a regime similar to the Resource Super Profits Tax for minerals and petroleum that was recently announced by the Australian Government. A discussion document for public consultation with the results of the modelling exercise and possible changes to the current fiscal regime is due in June 2010.

*Legislative regime*

23. The Crown Minerals Act is being reviewed to ensure the regime is fit for purpose, providing for the efficient management of petroleum resources, encouraging investment and ensuring that there is sufficient flexibility to adapt to different resource characteristics (frontier basins, methane hydrates, etc) and changing technologies.

*Government's roles*

24. The State has both public and ownership interests in the petroleum resource, and activities that span the spectrum from policy development, regulatory services, investment promotion, geoscience through to more commercial activities such as the SOE participation in upstream oil and gas. Many of these government roles are being examined as part of the Agency Review commissioned by the Minister of Energy in late 2009 as part of the Petroleum Action Plan, which is assessing the Crown's capability to manage its petroleum estate and is due to report at the end of May.
25. One option under development is to 'corporatise' most of the petroleum functions currently performed by Crown Minerals, that is, to value the Crown's asset (PV of royalty payments on producing fields, known but not producing fields, contingent resources and speculative resources). This entity/company would be charged with maximising the Crown's financial interest in petroleum (including methane hydrates). The activities of the company would be focused on allocating exploration rights and on rights to the resource itself (mining). The company would earn revenues from royalties and permit fees, the Crown would be paid a dividend and the company. The Government could consider any proposal such a company made to retain revenues for the purposes of pre-commercial geoscience and promotion activities. The company would be precluded from direct participation.
26. The proposition is that this model would strengthen the incentives to aggressively manage the petroleum portfolio on a commercial basis – strengthen governance, commercial and technical skills, commercial strategy, decision-making and recovery of revenues.

27. [Withheld s9(2)(i)]

28. The World Bank is currently undertaking a project on National Oil Companies and value creation. While there are examples of successful NOC's, the general rule is that NOC's with monopoly characteristics as proposed by Solid underperform against their private counterparts. SOE participation on a level playing field with private competitors may lessen this risk, although this would still be subject to the corporate governance and funding challenges faced by SOEs.

#### *Summary comments*

29. In summary:

- Solid are proposing a move away from a pure concessionary regime for the management of the petroleum estate.
- Solid does not currently have capability in this area and it is unclear where the synergies lie between core operations and a new business as a petroleum explorer and producer. Even the largest international oil companies and national oil companies tend to specialise.
- The first rights of refusal proposal would undermine international investor perception of New Zealand as an investment destination when New Zealand is still underexplored and on the periphery of investors' radar.
- Fiscal regimes can be designed to capture superprofits .
- There are a range of other options under development that seek to accelerate development of the petroleum estate.

#### ***Iron sands and steel milling*** (C = \$\$ R = ●)

30. New Zealand's iron sands resource is large – between 9-30 billion tonnes – comparable to Australian deposits. A number of key prospecting permits over the seabed will mature within the next three years, and at that point we will have a much greater understanding of the scale and nature of the deposits.
31. Crown Minerals argue for a strategic approach to the management of the allocation/development of the resource. While the resource is not nationalised, much of the ownership rests with the Crown (though Foreshore and Seabed policy will have a bearing on this). There are therefore no royalties and the resource rental is struck between the landowner and the developer, which gives the Crown significant control over the value gained. It will be important to avoid major international players from taking permits simply to control a key stake of the global resource without plans for active development.
32. If there were onshore processing, there would be additional significant infrastructure costs and energy demands.

**Methane hydrates** (C = \$\$\$ R = ●)

33. Methane hydrates have been identified off the East Coast of the North Island and can be considered as a potentially important part of our hydrocarbon resource. As yet we have very little understanding of these deposits and their potential for commercialisation. There is a high degree of uncertainty regarding the exact location, size and quality of this resource but they are potentially valuable.
34. Building a better understanding of our methane hydrate potential will require substantial private or public investment, with uncertainty as to whether such investment will be recovered. The Government will need to continue investing in more conventional petroleum research activities, such as seismic acquisition programmes, and it is not clear at this stage how investment in methane hydrate activities will exceed returns from these more conventional petroleum related activities.
35. Current technologies do not allow for the commercialisation of methane hydrates. This adds a further degree of complexity in allowing this resource to be a contributor to our economy in both the short and medium term. Some jurisdictions, such as Korea and Japan, are already actively pursuing a methane hydrate investment strategy based upon their own resource base. These programmes are driven by energy security considerations and less by direct commercial returns.
36. Solid propose a first right of refusal over the methane hydrate resource. Solid would then build in-house capability, map the resource, secure technology partners, implement pilot programmes and move towards commercial development.

*Comment*

37. Vesting the resource rights in Solid at this stage would seem premature. A clearer understanding of the nature of the resource should be attained before a development strategy is finalised. Given that the development of methane hydrates is unlikely to be commercial for some time yet, there is time to lay the foundations for choices by government.
38. That said, there are options for how the Crown seeks in the first instance to attain a better understanding of our methane hydrate potential.
39. [Withheld s9(2)(i), s9(2)(b)(ii)]

### Comparison of projects

40. The matrix below compares the projects on the basis of capex required and execution risk, and has helped inform our recommendations.

Capex	High		Lignite to diesel	Methane hydrates
		Lignite to urea	Iron sands extraction and steel milling	Conventional oil and gas
	Low	Lignite to briquettes Underground coal gasification Coal seam gas		
		Low	Risk	High