SOLID ENERGY
Coals of New Zealand

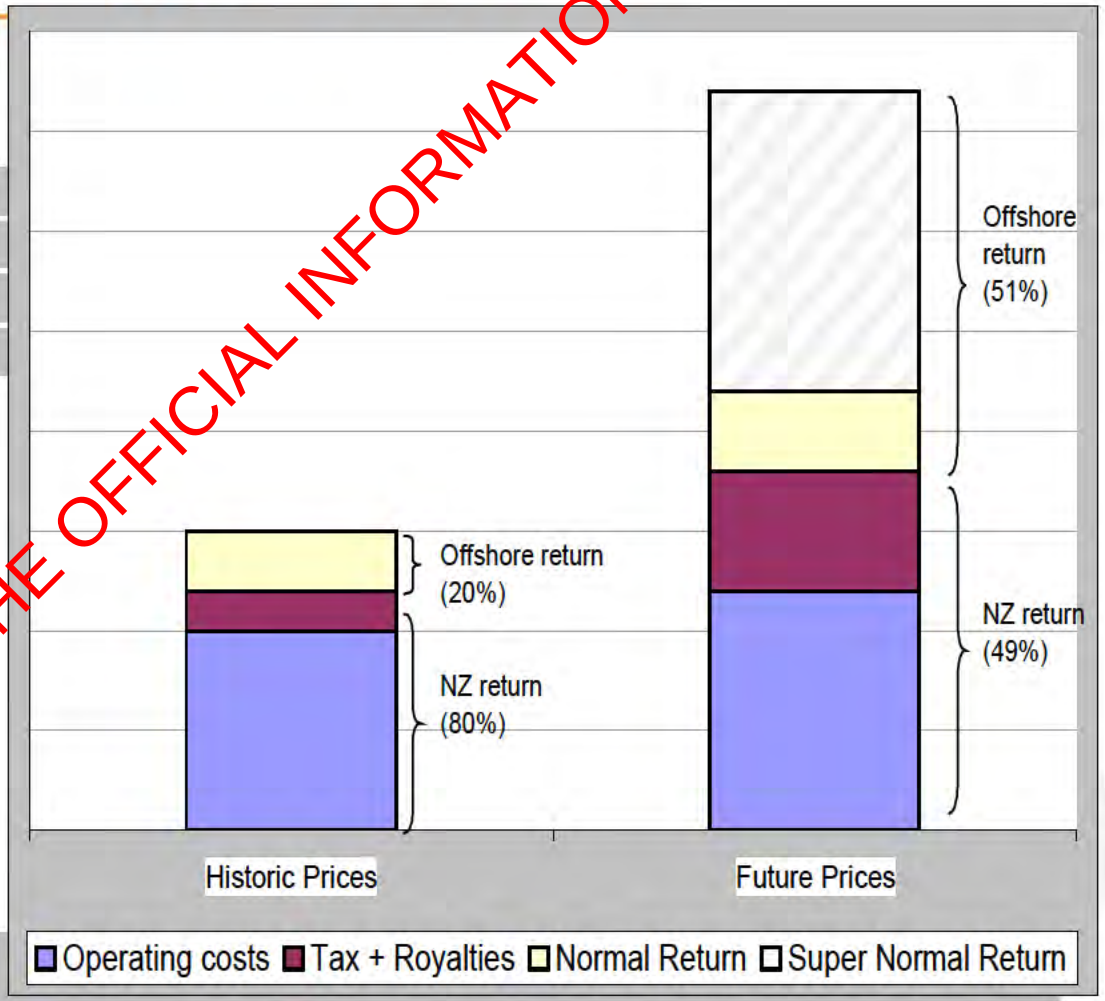
NZ National Resources Limited (NRL)

COMMERCIAL IN CONFIDENCE

28 April 2010

Development Risks Facing NZ Resources

- Offshore 'Super Profits'
  - Super normal returns extracted from offshore developers
- Resource Speculators
  - Creates a barrier to resource development
  - Wealth extracted by under-capitalised speculators – Redacted Redacted
- Development delays
  - History of limited new resource activity generated based on 'free market' philosophy



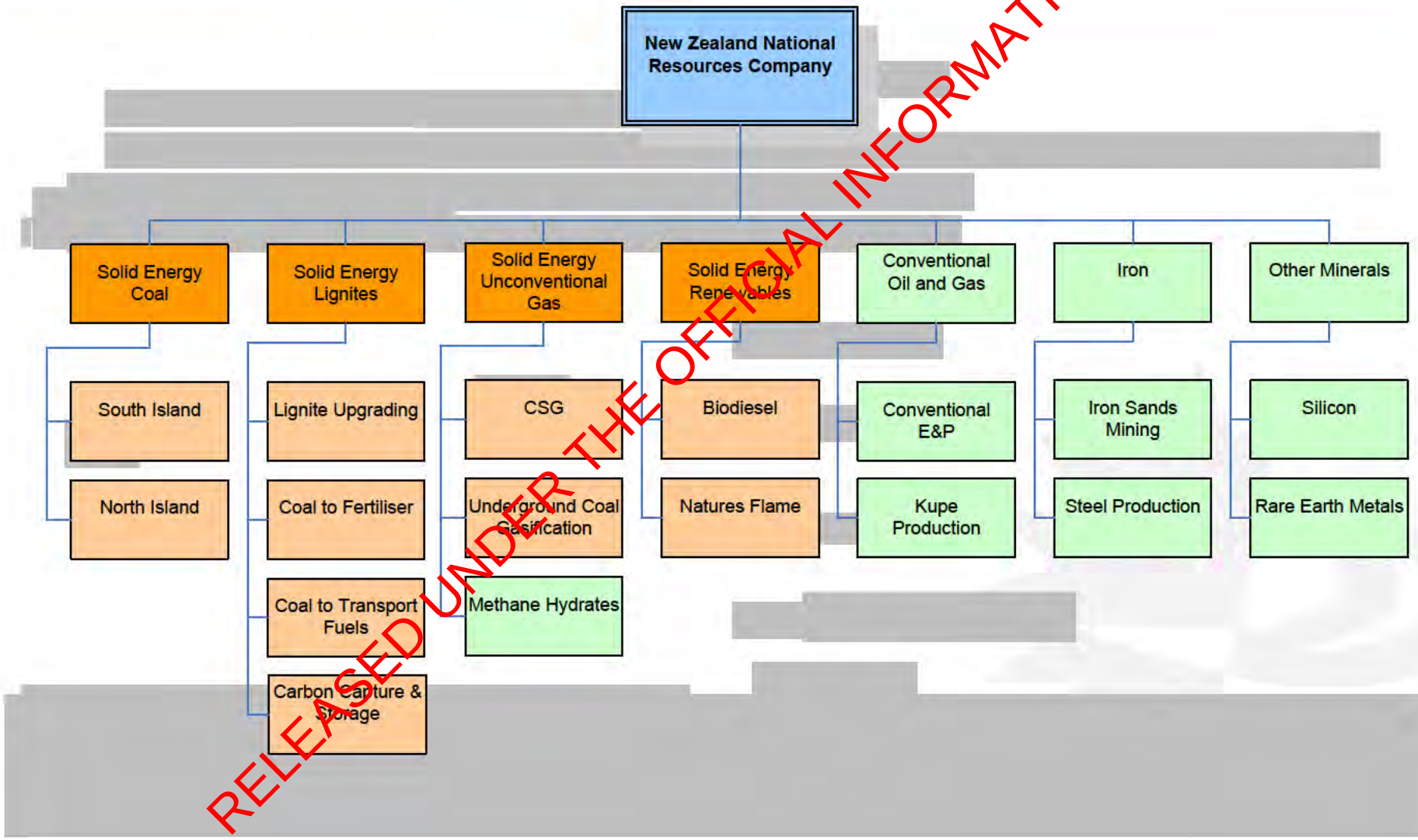
National Resources Company
– Strategic Objective

Stimulate and accelerate development of and using New Zealand natural resources & Capture maximum value, wealth and control for New Zealanders	
Stimulate Development by:	**Capture Maximum Value by:**
Provide significant **risk capital** to multiple resource exploration programmes, prior to seeking investment partners with lower risk appetite	Hold **equity ownership** in resource permits.
Partner with other credible organisations to bring additional risk capital to the market for resource investment.	Utilise capital from external sources my **maintaining control of the permits** and farming in partners only after risk capital has been spent and value created
Provide Crown Minerals with an alternative to developing national resources to **ensure that private sector do not use the existing permitting regime as an option** rather than the intention to produce resources.	Provide a significant **scale commercial vehicle that foreign commercial entities can engage with**.
Secure key conversion technologies and invest in plant development and feasibility.	Engage with global technology providers with the intention of **bringing technology to New Zealand** and transferring it to a company with the capability to adsorb iand leverage this.
Participate with existing E&P players to tilt the risk **reward profile towards production rather than exploration**	Selling **resource production**

National Resources Company
– Solid Energy as the Platform

- The optimal path for developing an integrated National Resources company is to start with an existing State Owned Entity as the foundation for additional business activities.
  - Least cost
  - Fastest
  - Most effective operational path.
- SE is by far NZs most diversified natural resources company and is the logical platform
  - Minerals – Coal, lignite, UCG
  - Petroleum – Coal seam gas (CSG), biofuels, carbon capature and sequestration (CCS)
  - Forestry - Biomass
  - Electricity – From CSG, hydro generation Stockton
  - Agriculture – OSR crops, dairy share milking
  - Quarrying – to support mine rehabilitation
- SE existing skills, systems and assets complementary with wider development mandate.
- SE free cashflow provides seed funding to develop the National Resources opportunity
- Many of the New Energy developments (Lignite, Underground Coal Gasification) are complementary or with directly integrate with National Resource activities

National Resources Company
– Scope and Structure



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Solid Energy Coal

- North Island
- South Island

Solid Energy Coal business

- Solid Energy is the second largest producer of primary energy in the country.
- Key custodian of New Zealand's strategic national coal resources
  - 85% of coal production in NZ
  - ownership and access rights to 4+Bt of coal resources.
- Solid Energy supplies high quality coal for export and NZ industrial and commercial markets.
  - 5 coal mines (3 open-cut and 2 underground) in the Waikato, Buller, Greymouth and Southland regions.
- Coal business outlook very strong.
  - Coking coal prices have already recovered to 3x historical levels.
  - Significant investment made (>$200M in the past year) to secure a 20 year life for export coal mining from the Stockton Plateau.

- **SE Forecast to generate free cashflows of** Redacted **into the foreseeable future.**
- Under a National Resources Company **best use of SE free cashflow is reinvestment** in further exploration and development.

Government Actions Required

- *Commitment from Government that **free cashflows generated by Solid Energy will be retained to support exploration and development projects** with the National Resources entity, rather than distributed to the shareholder as a dividend return.*

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Solid Energy Lignite

- Upgrading
- Coal to Fertiliser (CTF)
- Coal to Liquids (CTL)
- Carbon Capture and Storage

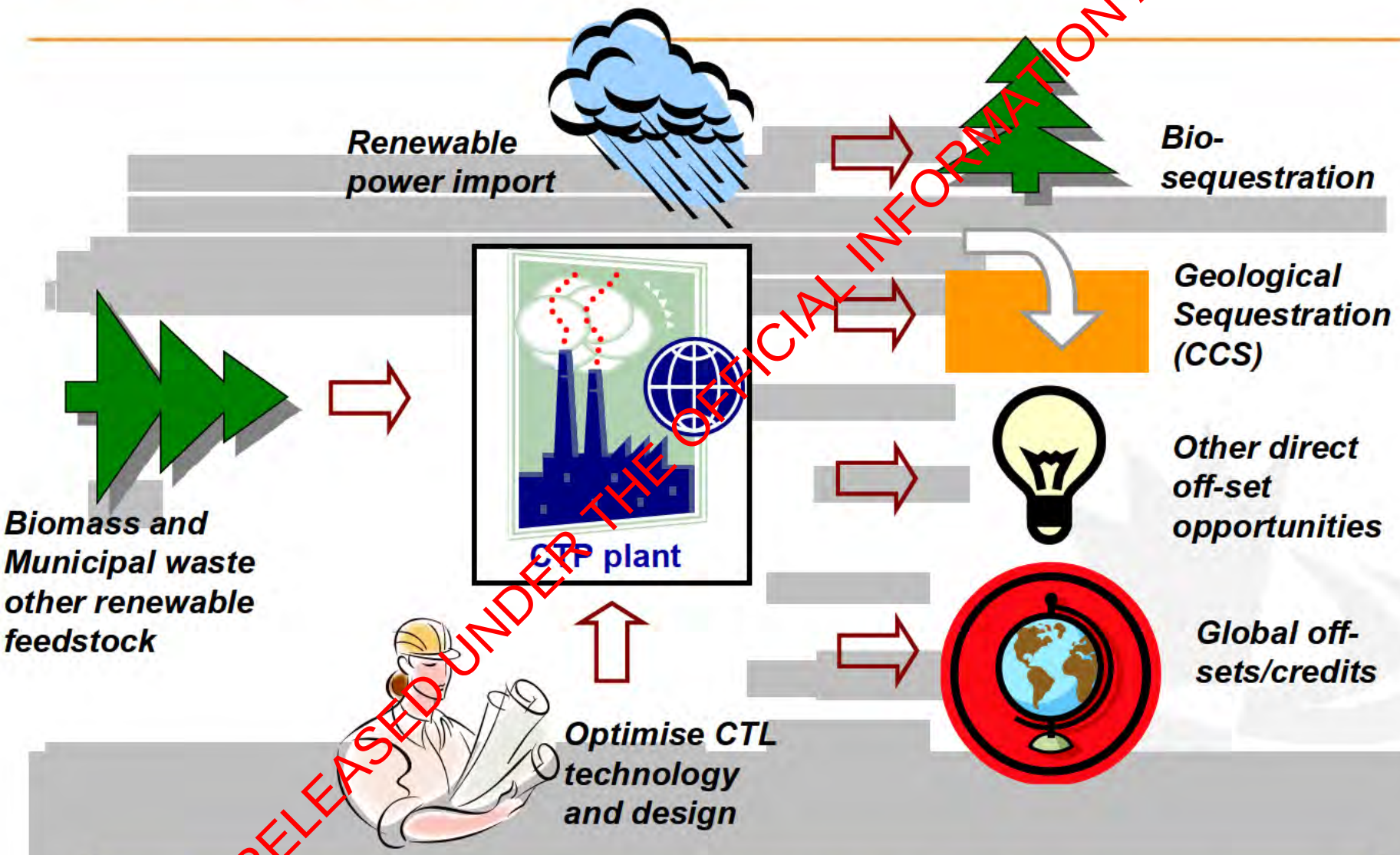
Solid Energy Lignite Conversion

- **Briquettes**
  - Annual revenue - Redacted
  - Upgrade lignite through binderless briquetting
  - Stage 1 – demo plant ~100,000 t/a plant (Commissioning 2011)
  - Stage 2 – Export plant 1Mt – 5Mtpa (2014)

- **Coal to Fertiliser**
  - Project revenue Redacted
  - Mine Opencast - 3 Mt/a lignite - 200 staff at mine
  - Plant - 1.2 Mt/a urea, Redacted capex, 180 staff at plant
  - Working with Ravensdown to completed joint Concept study
  - Proceed to feasibility Dec10

- **Coal to Liquids**
  - Project Revenue Redacted
  - Opencast mine - 12-15 Mt/a lignite, 500 staff at mine
  - Plant - 30-40k bbl/day (1.5-2 BL/a) 75% Diesel, 300 staff
  - Status Pre-feasibility study complete late 2010

Carbon Management Plan



Through portfolio approach carbon impacts can be effectively managed

Government Actions Required

- *Active support/specific process created to manage project effectively through the **consenting process given national significance**.*
- *Improve **enforcement of existing permit work programmes** and cancel existing permits which are not able to demonstrate an ability to viably extract minerals i.e. where only minerals under public roads are crown owned and available.*
- ***CO2 credit allocation** to the processing plants based on best practice technology given plants competitiveness at risk from imported product*
- *Clarification on **CCS regulations** including certainty surrounding pore space ownership, ongoing liability and storage parameters.*
- *Prepare legislation/regulation to provide for a **'first right of refusal'** to the National Resources Company for all **CCS permits** .*

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Solid Energy
Non-Conventional Gas

- Underground Coal Gasification (UCG)
- Coal Seam Gas (CSG)

Solid Energy - Non-Conventional Gas

- **Underground Coal Gasification**
  - 20 PJ pa (equivalent to e3p – 380MW - gas feed)
  - Pilot → Demonstration → Commercial
  - Gas production expected 2010
  - Initial market - electricity generation
  - Consider high value energy and chemical products long term (transport fuel, methanol fertiliser)
  - Multi project opportunities and globally scaleable technology options

- **Coal Seam Gas**
  - **Huntly**
    - Connection to gas transmission network
    - Annual Revenue Redacted
    - 3-5 PJ/pa into gas transmission system
  - **Taranaki**
    - Gas production anticipated at the end of 2011
    - Annual Revenue Redacted

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Solid Energy Renewables

- Natures Flame
- Bio-Diesel
- Switch

Renewable Energy

- **Natures Flame**
  - 3 plants currently operating (Chch, Rotorua, Taupo)
  - Domestic and export markets
  - Potential NZ capacity 300ktpa (currently 50ktpa)
  - Offshore wood pellet opportunities

- **Biodiesel New Zealand**
  - Used cooking oil and OSR feedstock
  - Plans to increase its production to 70m litres of Biodiesel a year, or around 2% of the country's total diesel

switch
energy solutions
at Solid Energy

- **Switch**
  - Wholesale supplier specialising in renewable and efficient heating systems for the commercial, industrial and domestic markets

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Conventional Oil and Gas

- Exploration and Production (E&P)
- Kupe Gas Field Development

Oil and Gas

- Stimulate and control development – maximize value for NZ

- Current Status
  - Production dominated by 5 - 10 companies – majority offshore owned (Shell, Origin, OMV, Mitsui, AWE)
  - Further 5 - 10 medium to large explorers - majority offshore owned
  - Significant unallocated prospective petroleum acreage (East Coast, Northland, Southern Basin)
- What NRL needs?
  - Compulsory allocation (RoFR) for new prospective acreage
  - Automatic allocation of existing permits not in compliance with agreed work programmes
  - Roll-up of existing SOE petroleum permits into 1 portfolio
    - GEL – 31% Kupe, 55.1% Cardiff, 100% Mangatoa
    - MRP - 50% Taranaki, 50% Southland
- What would NRL do?
  - Undertake extensive E&P programme
    - $500M - $1B (3 – 5 years)
    - 10 – 20 Onshore wells, 5 – 10 Offshore wells
    - Exploration resource proving in frontier basins
  - Resource with world class staff and technology providers
  - Bring production of 50,000bbl/d to market
- Funding
  - ~$100Mpa free cashflow from Kupe
  - Other available free cash flows
  - Consider farm-in or low % external equity following exploration success

Proposed Development Plan

Task	Indicative Cost	By When
Secure immediate capability and expertise in oil and gas exploration and production (see above)	$2M	Immediate
Consolidate Government owned petroleum resources •Transfer ownership in Kupe and other Government permits	$?	Dec 2010
Secure prospective petroleum acreage •Secure permits over unallocated acreage (Northland, East Coast and Southland) through FRoR (above) •Secure existing permits through purchase, partnering or FRoR (above)	Low cost	Dec 2010
Plan and undertake comprehensive exploration program •Explore Taranaki onshore and offshore opportunities –Gather and interpret existing data, acquire additional seismic –Undertake multiple well drilling program •Select 3 prospective "frontier basins' –Acquire comprehensive seismic data, undertake multiple well drilling program –Seek partners to fund/farm into programmes	Ramp from $10M to $100M pa.	2011 - 2017
Bring multiple 'Pohokura' scale fields to market	~$1B per site	2018+

Government Actions Required

- **Consolidate all Government ownership in oil and gas prospecting**, exploration and operational permits, into the National Resources Company. Key permits below:

Owner	Location	Permit	Type	Size	Expiry
Genesis Power Limited (31%)* - Kupe Holdings Ltd - GP No2 Ltd	Offshore Taranaki	38146	MP	257 km^2	Oct-21
Genesis Power Limited (100%)	Offshore Taranaki	38204	EP	516km^2	Apr-12
Mighty River Power (10%)	Offshore Taranaki	38491	EP	714km^2	Jun-14
Mighty River Power (50%)	Southland	38226	EP	558km^2	Nov-13

- **Improve enforcement of existing permit work programmes** and cancel existing permits which are not able to comply with agreed work programmes.
- As current permits expire, ensure new work programmes reflect comprehensive plans and significant ongoing investment in resource development. Company's unable to agree to work programmes or demonstrate a genuine ability to deliver the program will have the permits released.
- Alter legislation/regulation to provide for a **'first right of refusal'** to the National Resources Company for **newly available permit areas, cancelled permits and permits released by current holders**.

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Iron Sands

- Iron Sand Mining
- Steel Production

Iron Sands

- Path to world scale resource development

- Current Status
  - 40,000+km^2 of prospective iron sands resources currently permitted by 6 offshore companies (FMG – 14,000km^2, Seafield – 10,000km^2, Trans-Tasman – 8,500km^2, Sinosteel – 4,800km^2, Sericho – 3,200km^2, Iron Sands off-shore Mining – 2,300km^2)
  - All resources held under prospecting permits expiring between Mar 2010 and Dec 2011
- What NRL needs?
  - Automatic allocation of existing permits not in compliance with agreed work programmes
  - Allocation of current prospecting permits at termination (most 2010 and 2011) – directly or through onerous exploration permit conditions
- What NRL would do?
  - Undertake extensive exploration programme
    - $500M (3 – 5 years)
    - Resource with world class staff and technology providers
    - Prove resource and complete commercialisation plan
    - Prove value-add opportunities for Iron and steel production utilising leading edge technologies (e.g. UCG) – stage gate development
    - Commence global scale iron sands development – 12Mtpa
- Funding
    - Initial exploration – From available free cash flow
    - Consider farm-in or low % external equity following exploration success

Proposed Development Plan

Task	Indicative Cost NZ$M	By When
Identify and secure key iron sands resources •Permits accessed through FRoR above •Assess opportunities to purchasing current operating iron sands sites at Waikato North Head and/or Taharoa sites	Low cost $?	2010 - 2011
Confirm market potential and work to increase raw iron sand exports •Leverage Solid Energy extensive steel market network •Develop partnership opportunities –including long term off-take agreements to secure/underwrite capital development.	Low cost	Dec 2011
Develop new iron sands mine or extend existing capacity •Complete resource proving and mining feasibility •Construct and operate iron sands mine and export facility	$100M	Dec 2013
Select and secure optimal conversion technologies •Global search and assessment of iron sands conversion technologies •Secure prospective technologies through contractual relationships	Low cost	Dec 2010
Design, engineer and construct conversion plant(s) (pilot and demonstration) (100kpa – 500ktpa)	$125M	2016
Feasibility and engineering studies for commercial scale conversion plant for export	$125M	2018
Design, engineer and construct second train for commercial scale conversion plant for export (additional 10 Mtpa)	$600M	2020-2021

Steel Production

- Become the world leader in new ultra low cost steel production

- Opportunity
  - Add significant value to NZ resources by applying leading technologies to produce ultra low cost Steel
  - Redacted
  - Redacted
- What NRL needs?
  - Iron sand resource allocation per previous slide
- What NRL would do?
  - Undertake detailed a feasibility programme to confirm technical and commercial viability
  - Feasibility programme $200M (3 – 5 years)
  - Seek market/funding partners from SE extensive Steel Customer network
  - Develop and commission project through stage gate development - similar to lignite conversion process
- Funding
  - Initial feasibility – Available free cash flow
  - Consider market partner/equity following confirmation of project viability

Proposed Development Plan

Task	Indicative Cost	By When
Secure iron sands resources to support commercial scale steel production •See above	Low cost	Dec 2011
Secure access to specific technology components Redacted	$10M	Dec 2012
Develop equity and/or funding partnerships •Technology providers •Market off-takers (Steel producers)	Low cost	Dec 2012
Complete plant project development and engineering •Prefeasibility •Feasibility •FEED/Detailed design	$100M	Dec 2015
Develop new iron sands mine or extend existing capacity •See iron sands above	See above	2016
Redacted Redacted	*	2018
	*	2020

** Expect steel plant costs to be funded by partner. NRL responsible for iron sand and syngas production*

Governmental actions

- There are 3 key actions required by Government to support iron sands development:
  - Improve **enforcement of existing permit work program** and cancel existing permits which are not able to comply with agreed work programs.
  - As current permits expire, **ensure new work programmes reflect comprehensive plans and significant ongoing investment in resource development**. Company's unable to agree to work programmes or demonstrate a genuine ability to deliver the program will have the permits released.
  - Alter legislation/regulation to provide for a **'first right of refusal'** to the National Resources Company for **newly available permit areas, cancelled permits and permits released by current holders**
  - Confirm **CO2 credit allocation** to the steel plant based on best practice technology given plants competitiveness at risk.

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New Non-conventional Gas

- Methane Hydrates

Methane Hydrates

- Develop as the world leader in the next great energy source

- Current Status
  - Large methane hydrate deposits
  - 20+tcf recoverable (150 years of resource)
  - Prospective Methane Hydrate acreage currently unallocated
- What NRL needs?
  - Compulsory allocation of new prospective acreage
- What NRL would do?
  - Undertake extensive exploration programme
    - $10 - $50M (3 – 5 years) exploration programme
    - Engage leading technology providers and suppliers (GNS/Schlumberger)
    - Establish global leadership position in methane hydrate development
    - Produce up to 300PJpa of gas
    - Position to leverage skills offshore
- Funding
    - Initial exploration - SE free cash flow
    - Consider farm-in or low % external equity following exploration success

Proposed Development Plan

Task	Indicative cost NZ$M	By when
Secure resource rights	Minimal	2010
Build in-house capability •Program Director 2010 •Technical Director 2011		2010-2011
Resource characterisation •Mapping the resource •Seismic (if required)	NZ$5m pa.	2011-2013
Establish international credibility •Potential participation in current projects		2011-2016
Secure technology partners		2015-2017
Resource characterisation •Offshore Drilling program include a pilot	NZ$320m	2017-2019
Development of Commercial Field •Pilot phase 10PJ in cluster of 6 wells •Demonstration scaling to Commercial development (150 - 300 PJ)	NZ$4-8b	2020

Governmental actions

- Alter legislation/regulation to provide for a **'first right of refusal'** to the National Resources Company for newly available prospective methane **hydrate permit areas**.

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Other Minerals

- Silicon Metals
- Other Minerals

Silicon Metals

- Produce the worlds purest silicon metal

- Current Status
  - High quality quartz deposits in Southland
  - 2 large permit holders
  - Synergies with lignite development
- What NRL needs?
  - Compulsory allocation of new prospective acreage
  - Automatic allocation of existing permits not in compliance with agreed work programmes
- What NRL would do?
  - Undertake exploration programme and plant build
    - $500M (3 – 5 years)
    - Prove resource and complete commercialisation plan
    - Commission silicon metals plant – 100+ktpa
    - Establish synergies with existing projects
- Funding
    - Initial exploration - Available free cash flow
    - Consider farm-in or low % external equity following exploration success

Proposed Development Plan

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Development of Commercial Field •Pilot phase 10PJ in cluster of 6 wells •Demonstration scaling to Commercial development (150 - 300 PJ)	NZ$4-8b	2020

Other Minerals

- Unlock NZ mineral potential

- Current Status
  - Very small contributor nationally
  - Known existence of copper, nickel, ilmenite, rare earth minerals, bentonite etc
  - Resource largely under explored
  - Large permits held by off-shore companies
- What NRL need?
  - Compulsory allocation of new prospective acreage
  - Automatic allocation of existing permits not in compliance with agreed work programmes
- What NRL would do?
  - Undertake extensive exploration programme
    - $50M (3 – 5 years)
    - Identify key resource targets and optimal locations
    - Utilise world class technology providers and suppliers
    - Undertake extraction of high value minerals
    - Optimise exploration programme across all minerals
- Funding
    - Initial exploration - Available free cash flow
    - Consider farm-in or low % external equity following exploration success

Proposed Development Plan

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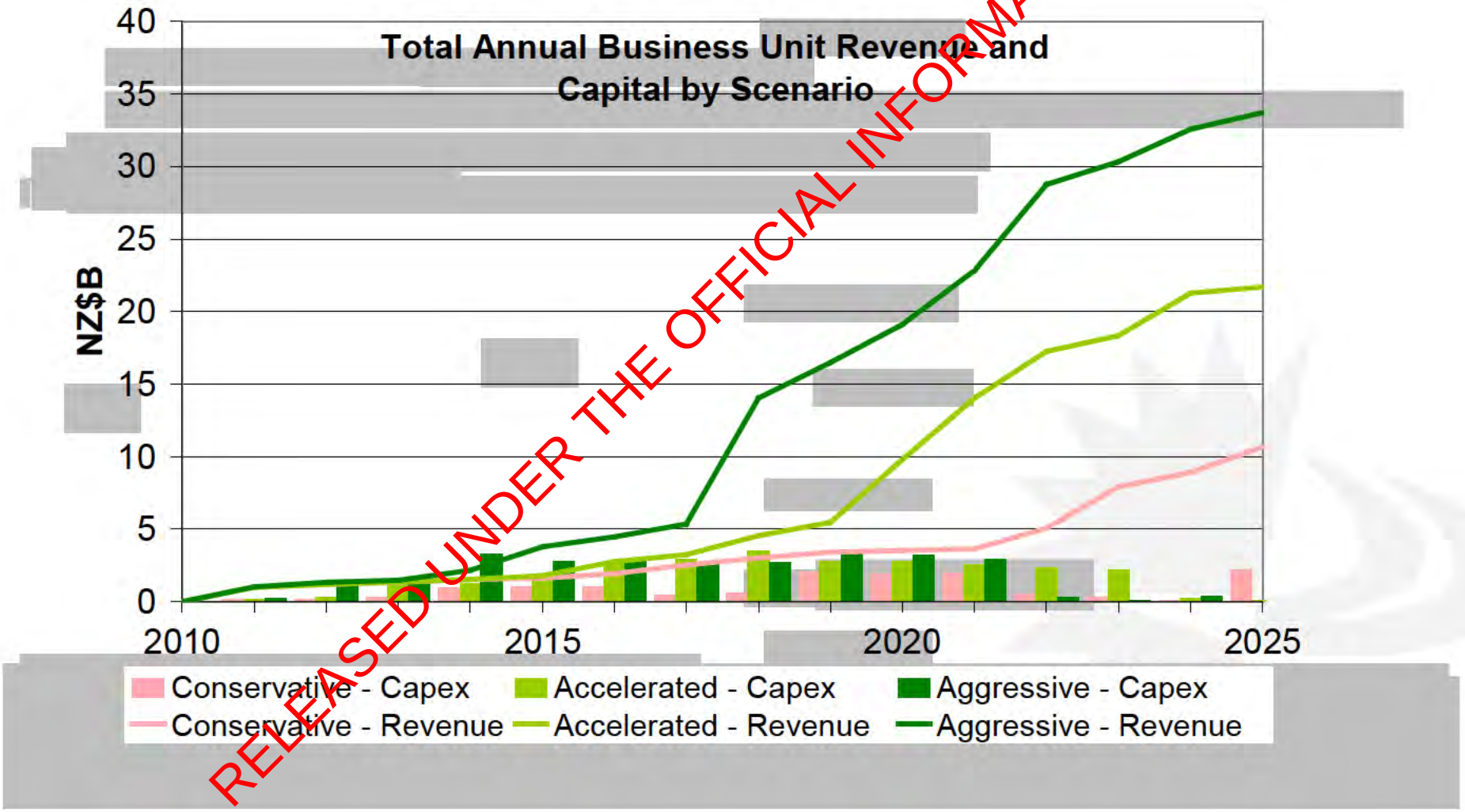
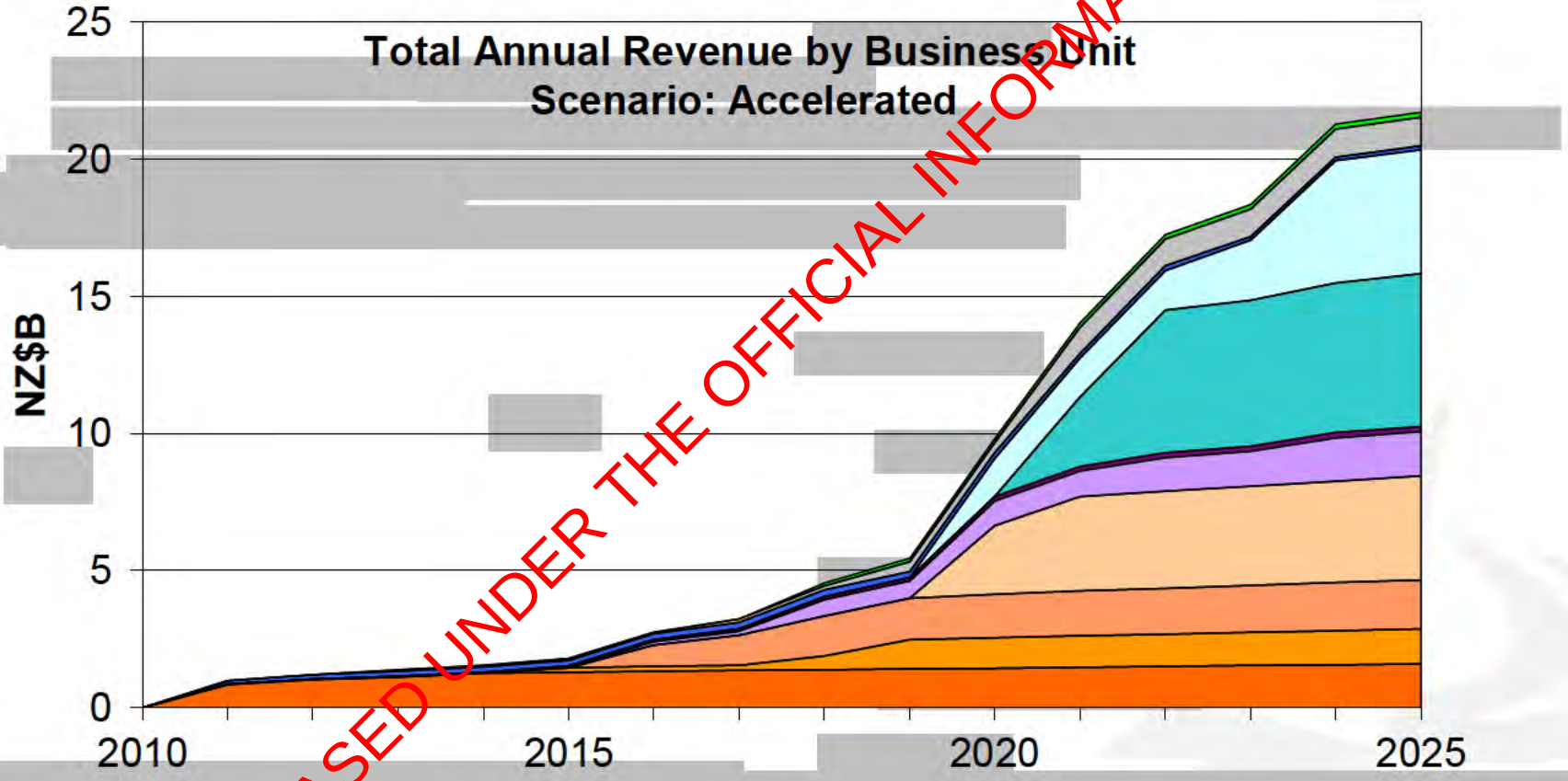
Natural Resources Consolidated

- Export equivalent revenue $10B - $35B per year



National Resources Consolidated

- Revenue Mix



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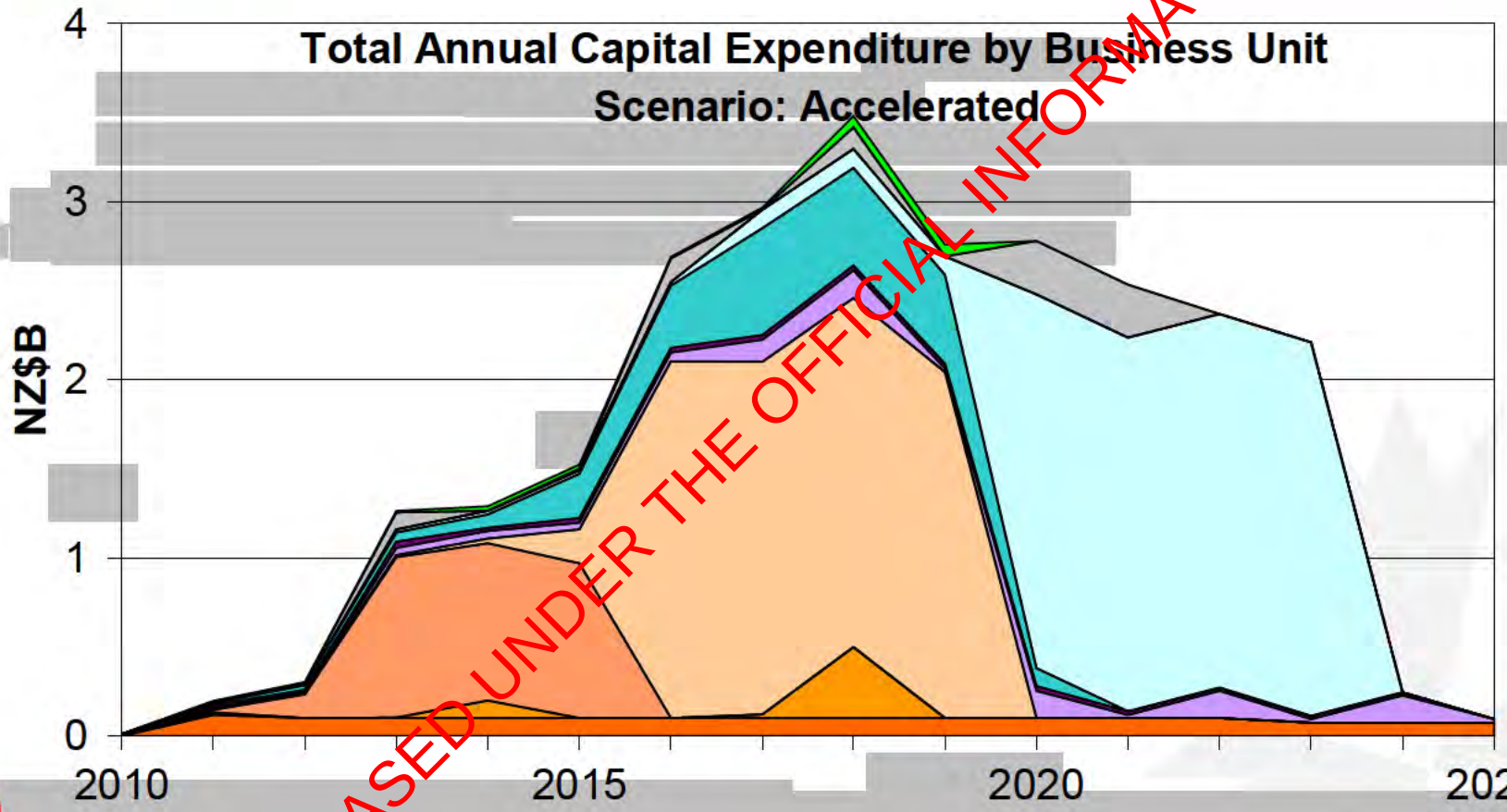
National Resources Consolidated

- Capital Profile



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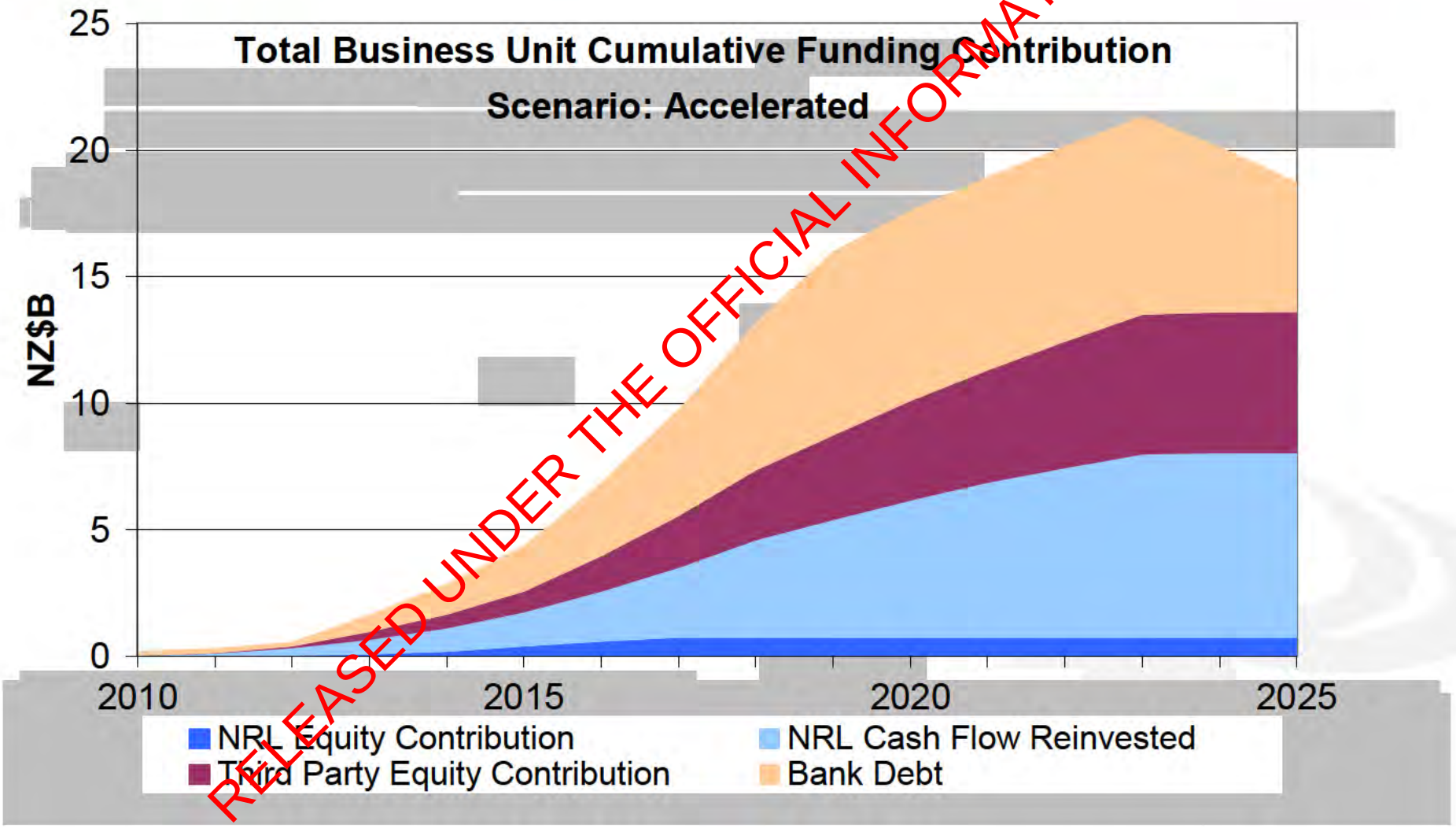
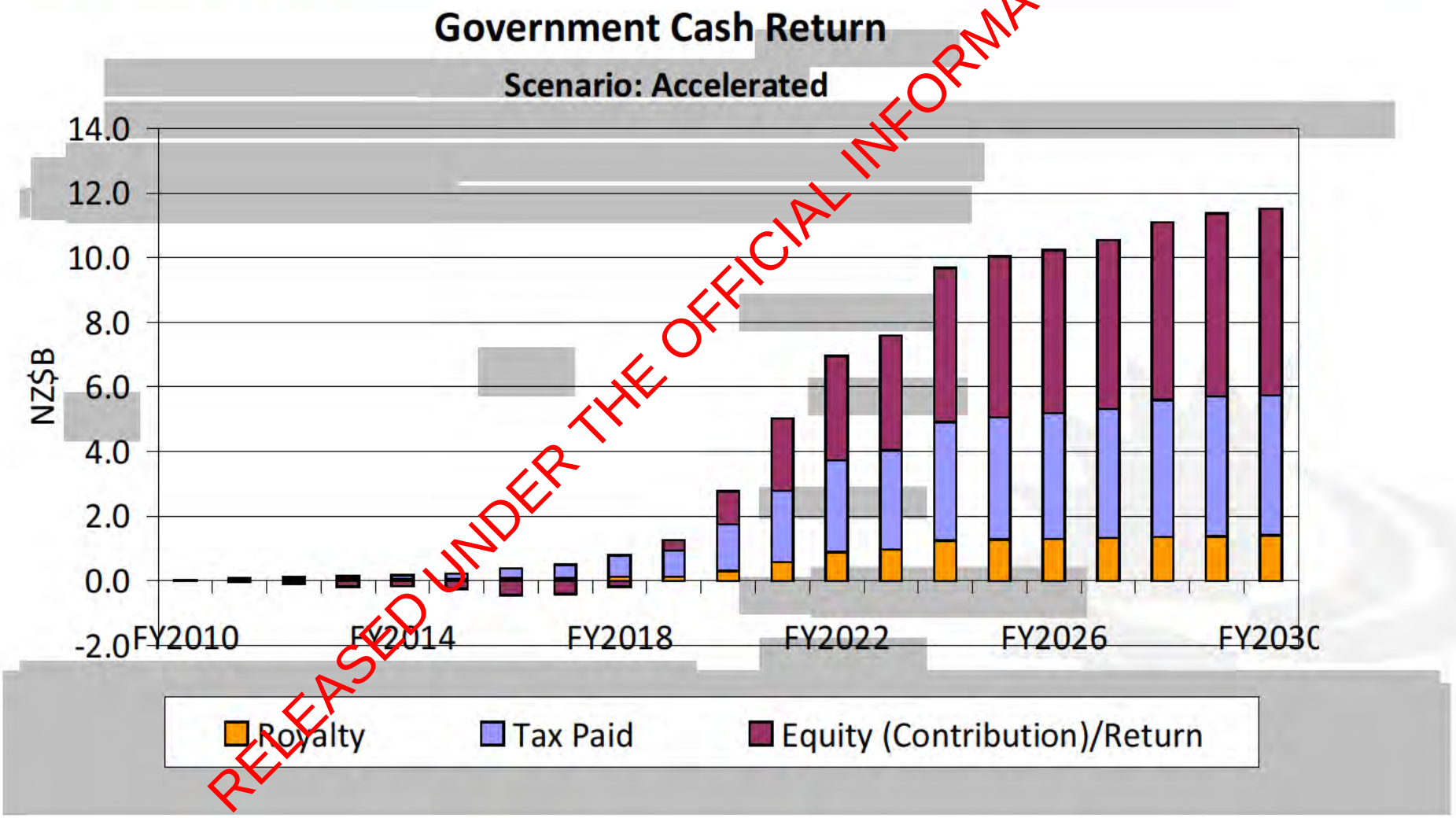
National Resources Consolidated

- Funding Source



National Resources Consolidated

- Govt Cash Return



Opportunities for NZ from this picture

- Intergenerational step change for the future

- Environment
  - Wealth available for environmental funds extending NZ conservation values – e.g. enhancement of bio-diversity, protection of native animals, flora and fauna, extension of conservation land and facilities etc.
- Living standards for future NZers
  - Wealth
    - Social welfare
    - Education
    - Health
    - Retirement funding
- Opportunities for future NZers
  - Employment – highly skilled/highly paid
- Smoothest transition to 'post fossil fuel' world
  - Create a leadership position in transition technology

Is this out of step with the world?

- No! it is more consistent
- Global trend to more countries looking to nationalise natural resources after a period of privatisation in the 90's
  - Petroleum industry too important to economy
  - Nations looking to extract higher rent for there natural endowment
- National Oil Companies (NOC's) now control 78% of worldwide oil and gas (Kretzchmar, 2009)

Enterprise Name	State Ownership	Country	Oil & Gas Reserves (Bboe)	Liquids (1000 bpd)	Gas (MMcf/day)
Saudi Aramco	100%	Saudi Arabia	300.9	9,045	6,900
Pemex	100%	Mexico	18.7	3,723	3,244
Petrobras	51%	Brazil	11.1	1701	2010
Petronas	*100%*	*Malaysia*	*24.9*	*731*	*4,172*
Pertamina	100%	Indonesia	21.0	1139	2562
Petroecuador	100%	Ecuador	4.6	204	10
Statoil	82%	Norway	4.3	740	1921
CNOOC	71%	China	2.2	306	291
PTT	100%	Thailand	1.0	19	555

- International Oil Companies (IOC's) have underperformed the NOC's due to falling access reserves
- Statoil, Petrobras and Vale examples