



IWI

Investment Wānanga

Māori Economic Development Taskforce

Appendix Two– Asset Classes

Overview

August 2010





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Overview

Commercial opportunities

We have provided information on five example commercial asset classes, based in part on the information contained within The Treasury, *Infrastructure: Facts and Issues*, September 2009. This was accompanied by additional research for recent examples of asset developments matching that of the following classes, these include:

1. Energy Generation
2. Commercial Construction
3. Property Ownership
4. Private Healthcare
5. Public Schools
6. Utilities Network- Water; and
7. Transport

For each of these asset classes we have sought to provide a high level overview that includes;

- Commentary on the characteristics of the asset;
- High level profile of the asset;
- New Zealand examples and opportunities; and
- International examples.



Energy Generation- General Asset

Classified as the construction, ownership and operation of energy generating assets and retailing energy purchased from the wholesale market. The comparison is made between Contact Energy Limited and Trustpower Limited. The example asset for discussion purposes here is the construction, ownership and operation of an energy generating asset.

Key Return and Risk Characteristics

Capital intensive fixed asset with returns to scale. Wind and geothermal assets have an operational life of 25-30 years.

Major price risk stems from fluctuating wholesale energy prices: the average New Zealand electricity price has fluctuated between 12.2 and 15.9 cents per kWh over the last five years³. Also, large risks associated with volatility in plant output (especially for wind and hydro).

Iwi well placed to enter joint ventures with existing generators. Some form of partnership with an existing generator is needed to secure access to the electricity market and manage price volatility risks (through hedging).

Wind

Recent NZ examples range in size from \$100m to \$400m.⁴ Project cost varies with turbine size and numbers, site accessibility and geographical distance from the local grid.

Geothermal

Power plant establishment costs vary from \$90m to \$345m.⁴ Exploration and drilling costs can total around \$45m per project.⁵ NZ's geothermal resource is considered comprehensively mapped, with new discoveries coming mainly from expansions of existing fields.

Market Return Profile

Analysing listed energy companies' stocks the weighted average return required by equity investors is 10.3% per annum. This is representative for a full integrated power company* with diversified, mature generation assets.

The debt margin for this industry is 4 - 6% above the risk free rate. Any financing obtained would require compensation to at least the risk free rate plus the above risk premium, equal to 9 - 11% per annum at 31 March 2009.

Leveraging at the industry level of 75% equity 25% debt, for example a \$200m Wind Farm would require \$120m equity and \$80m of debt.

The market generated post-tax return for this investment would be 8 - 10%. The market would not provide any higher return than this for the asset and the return reflects risks associated with the asset.



Energy Generation- General Asset

| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|--|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| | \$200m | 8-10% | 0.5-0.6 | \$150m | \$50m | 10-12% | 9-11% |



Energy Generation- NZ Examples

NZ examples and opportunities

Nine operational wind farms generating 404MW with 19 further planned.¹³

- Project West Wind (\$350- 420m; 140MW)
- White Hills (\$170-204m; 68MW)
- Te Rere Hau (\$80m; 49MW)

Geothermal:

- Kawerau (\$300m; 90MW)
- Nga Awa Purua (\$400m; 132MW)

Key risks

Technology and variable generation (especially for wind)

Price volatility (best managed by power generation company)

Value proposition

Strong potential for joint-ventures and partnerships with existing generation companies:

- Access to specific resources required as fuel (eg, water)
- Access to land

Energy Generation- International Example

| Example project types | Size | Structures | Risks | Terms | Returns or revenue |
|---|---|--|--|---|--|
| <p>UK govt. regulator proposal to bidders for off-shore wind farm transmission assets</p> | <p>£1.15bn of electricity transmission projects (from 90-504MW)</p> <p>Option for second round of bidding involving estimated £3bn in transmission assets</p> | <p>Bidders will design, build, finance and maintain the transmission assets.</p> <p>Some bids are for operational services only.</p> | <p>New technology risks reflected in insurance costs</p> <p>Long lead times for repairs/new parts.</p> <p>Revenue impact of technology failure</p> | <p>Successful bidders will run the assets for 20 years.</p> | <p><u>To capital:</u> ?</p> <p><u>To operations:</u> ?</p> |



Commercial Construction- General Asset

This industry is classified as the construction of medium to large-scale projects for purchase and operation by another party. The comparison is with Fletcher Building Limited a fully diversified construction company developing project that vary greatly in size.

Asset Key Return and Risk Characteristics

Revenue is typically provided when milestones are reached, commonly referred to as stages.

Significant risk of cash flow shortages if milestones are not reached in time, capital construction costs exceed budget and or default from contracting party. Gaps between stages within projects can be significant and could be susceptible to loss of financing.

Other types of assets in this class could include public schools and hospitals under a design and build-type arrangement with the Crown. This has similar risks as above, with the benefit of default free cash flows.

For example purposes we have used an asset size of \$10m.

Market return profile

Analysing listed construction companies' stocks the weighted average return required by equity investors is 14 - 16% per annum.

The debt margin for this industry is 5 - 7% above the risk free rate. Any financing obtained would require compensation to at least the risk free rate plus the above risk premium, currently equal to 10 - 12% per annum.

Leveraging at the industry level of 56% equity 44% debt , for example a \$10.0m construction would require \$5.6m equity and \$4.4m of debt. The company compared here is a listed company the proportion of debt (leverage) may be significantly different for non-listed construction companies.

The market generated post tax return for this investment would be 11-13%. The market would not provide any higher return than this for the asset and the return reflects the associated risk of Fletcher Building Limited.



Commercial Construction- General Asset

| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|--|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| | \$10.0m | 11 - 13% | 0.8 – 0.9 | \$5.6m | \$4.4m | 14 - 16% | 10 - 12% |

Commercial Construction- NZ Examples

(eg, of social assets such as schools, hospitals and housing)

NZ examples and opportunities

Schools ² - \$314m planned CAPEX to 2012. School construction projects range from \$7-60m:

- Remarkables primary (\$17.3m)
- Papamoa primary (\$7.1m)
- Albany senior high school (\$60.6m)

Health ²: \$233m new capex per annum needed for next 5 years. Projects committed but not started include:

- Whangarei Hospital Redevelopment, Stage 1 (\$25.1m)
- Hutt Valley ED and theatre expansion (\$81.9m)

Housing : Large projects currently in planning stage. Projects committed but not started include:

- Hobsonville Point PPP to begin 2010¹⁵
- Papakura housing project (details to be finalised)¹⁶

Key risks

Risks related to design and build escalate with scale and complexity, including but not limited to:

- consents
- materials
- labour
- project phasing

Market risks depend on contractual arrangements prior to development

Value proposition

This is an established market requiring specialist knowledge and infrastructure. Iwi could speed resource consent and community buy in for certain projects.



Commercial Property Ownership- General Asset

Defined as the ownership of property with revenues provided from lease rental and capital gain/(loss) realised on sale. Industry comparison for the following national companies AMP, CDL, Kiwi Income, Goodman Property and Property for Industry. The asset for example purposes here is Commercial property within the Wellington Central Business District (CBD).

Asset Key Return and Risk Characteristics.

The key risk is property vacancy. Lease terms in Wellington CBD can range from 2 -7 years.⁷

Average vacancy in 2009 for the Wellington CBD was between 3% -7%.⁸ Depending on the property location, size and presentation it would take any where from 3 - 9 months to lease at this vacancy rate, not taking into account rental rates, internal fit-out, location, or any rental incentives. In the current environment its not uncommon a tenant could be attracted in a shorter time frame 1 - 2 months.

In Wellington 2009 rental ranged from \$200 - \$ 500 per square meter and required opex of \$70 - \$120 per meter.⁹ Recent sales in Wellington CBD range from Sovereign House \$20m to Maritime Tower \$63m.⁹

Market return profile

Analysing listed property company stocks the weighted average return required by equity investors is 7 – 9% per annum.

The debt margin for this industry is 2 - 4% above the risk free rate. Any financing obtained would require compensation to at least the risk free rate plus the above risk premium, currently equal to 7 – 9% per annum.

Leveraging at the industry level of 57% equity 43% debt, for example a \$20m property investment would require around \$12m equity and \$8m of debt.

The market generated return for this investment could be between 6 - 8%.



Commercial Property Ownership- General Asset

| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|--|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| | \$20m | 6 - 8% | 0.3 - 0.4 | \$12m | \$8m | 7 - 9% | 7 - 9% |



Commercial Property Ownership- NZ Examples

NZ examples and opportunities

Recent sales of commercial property in Wellington CBD include:

- Sovereign House (\$20m)
- Maritime tower (\$63m)

Key risks

Key revenue risks from vacancy. Lease terms in Wellington usually 2 -9 years.

Value proposition

Long term partnership with the Government. Providing the opportunity for whole of life cost optimisation.

Education –Public School Ownership

Asset Key Return and Risk Characteristics.

Iwi would finance, construct and maintain a school for the Ministry of Education. Revenue is generated via a long-term (20-30 year) lease.

On average a new school development costs \$16m, excluding land.² Opex funding provided to each state school is largely determined by the number of children attending and the condition of the property, and is set by the Ministry of Education for each school on a five yearly basis.

Income stream will take the form of rent and any long-term real estate appreciation. There is an opportunity for iwi to leverage off existing land holdings.

Market return profile

Public school ownership can be broadly defined in terms of two asset classes – commercial construction and commercial property ownership.

Because the Crown carries a very low default risk and engages in very long lease terms of up to 30 years, therefore the returns for this type of asset are likely to be lower than for a strictly commercial asset.

This type of ownership structure is akin to a PPP where the asset owners provide whole of life maintenance and servicing. The example presented here contains similar issues and factors to the financing, construction and ownership of public hospital assets.

| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|--------------|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| Ownership | \$20m | 6 - 8% | 0.3 – 0.4 | \$12m | \$8m | 7 - 9% | 7 - 9% |
| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
| Construction | \$10m | 11 - 13% | 0.8 – 0.9 | \$5.6m | \$4.4m | 14 - 16% | 10 - 12% |

International Example- Commercial Property Ownership

| Example project types | Size | Structures | Risks | Terms | Returns or revenue |
|--|--|---|---|---|---|
| PUBLIC SCHOOLS Partnerships Victoria in Schools | AUS\$225 million for 11 new schools, incorporating innovative designs and enhancements that go beyond scope of RFP | Design, construction, financing and maintenance | Range of finance, construction and operational risks. Guaranteed demand for services. | Quarterly service payments based on performance, and inflation adjusted, over 25 year operating period. | <u>To capital:</u> \$137m NPV est. capital outlay <u>To operations:</u> \$117m NPV (revenue) |

Private Healthcare – Facilities

The asset discussed here is the design, build and operation of private healthcare facilities. The industry comparisons are Abano Healthcare, Metlifecare and Ryman Healthcare.

Return and Risk characteristics

Revenue is largely driven by patient numbers, with the added risks associated with receiving payment from insurance companies/government.

Operational risks are the requirement of skilled labour, using specialised technology and equipment within a regulatory industry. Is a single-use assets in the private care sector.

Recent investment examples within public healthcare construction range from the building of a theatre at Auckland’s Starship hospital for \$13m, construction of a theatre including car parking, utilities and infrastructure Wellington’s Hutt Valley Hospital for \$81.9m and the major redevelopment of Wellington central hospital for \$346m.¹²

Market Return Profile

Analysing listed health care company stocks the weighted average return required by equity investors is 12 - 13% per annum.

The debt margin for this industry is 4 - 6% above the risk free rate. Any financing obtained would require compensation to at least the risk free rate plus the above risk premium, currently equal to 9 – 11% per annum.

Leveraging at the industry level of 40% equity 60% debt, for example a \$13m Commercial property investment would require around \$5.2m equity and \$7.8m of debt.

The market generated return for this investment could be within the range of 8 - 10%.

| Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| \$13m | 8 - 10% | 0.5 – 0.6 | \$5m | \$8m | 12 - 13% | 9- 11% |

Health Facilities- International Examples

| Example project types | Size | Structures | Risks | Terms | Returns or revenue |
|-----------------------|---|---|---|---|---|
| NSW Hospital upgrade | <p>AUS\$214 m for new hospital and facilities (mental health, cancer radiation, oral health). AUS\$316m worth of facilities management over 28 years</p> | Design, construction, facilities management and non-clinical services | <p>Design and construction risks.</p> <p>Operational risks: -Service needs to keep pace with technology -Demand for service may differ from expectation -Risk of strikes or industrial action -Underestimation of insurance costs</p> | Performance based, inflation and volume adjusted monthly payments over the term of the project. | <p><u>To capital:</u></p> <p><u>To operations:</u> AUS\$316m (revenue)</p> |

Utilities Network – Water Infrastructure

The asset described here is the construction and lease of a new utility asset such as a waste water or fresh water infrastructure.

Utility Network Key Return and Risk Characteristics

Councils have indicated to spend \$2,800m in drinking water systems over the next ten years in both renewal and new assets.

Waste water has forecasted \$3,700m in both renewals and new assets. Most water utilities within New Zealand are Council owned and operated, with costs paid directly through usage charges or in directly through rates.

Revenue risk varies from construction costs and the.....

Potential for Iwi-Crown collaboration over access to land and co-financing at a margin above government's cost of capital.

Market Return Analysis

To determine the expected return for a general utility we have used the comparison to a New Zealand gas network as they are large utility networks that provide a service.

The debt margin for this industry is 1 - 2% above the risk free rate. Any financing obtained would require compensation to at least the risk free rate plus the above risk premium, 6 – 7% per annum.

Leveraging at the Commerce Commissions estimate optimum ratio of 60% equity 40% debt, for example a \$50m investment would require around \$30m equity and \$20m of debt.

The market generated return for this investment could be between 7 - 8%.

| | Asset Size | Post-Tax Return | Asset Beta | Equity Funding | Debt Funding | Post Tax Return to Equity | Pre-Tax Return to Debt |
|------------------|------------|-----------------|------------|----------------|--------------|---------------------------|------------------------|
| Ownership | \$50m | 7.– 8% | 0.5 – 0.6 | \$30m | \$20m | 9 – 10% | 6 - 7% |

Water Infrastructure- International Example

| Example project types | Size | Structures | Risks | Terms | Returns or revenue |
|---|--|----------------------------|--|--|---|
| WATER Barwon Water Biosolids Management Project | AUS\$77m to cope with 60,000t increase of biosolids per year | Construct and manage plant | Range of finance, construction and operational risks | Service delivery/ operation period of 20 years. Monthly payments with performance component | <u>To capital:</u> ? <u>To operations:</u> ? |

Transport construction- NZ Examples

(eg, tolling asset)

NZ examples and opportunities

Roads: \$8-11bn, Roads of National Significance;
Other projects (range \$7-230m). Eg;

- Harbour arterial, Dunedin (\$10.3m)
- Kopu Bridge, Waikato (\$58m)
- Tiwai Bridge (\$11.5m)
- PENLINK urban arterial , Auckland (\$203.4m)
- AMETI (public transport priority), Auckland (\$11.8m)
- CBD Bus priority measures, Wellington (\$10.6m)

Air Services:

- Combined intl. and domestic terminal , Christchurch (\$195m)
- Runway extensions, Hamilton (phase 1, \$13m; phase 2, \$9m)

Rail:

- \$2bn of national spend over next 10 years upgrading stock and lines
- Further expansion and electrification of metro services in Auckland (\$2bn)

Key risks

Construction and cost-overflow risks.

Revenue risks depending on how much cost is recouped via the toll and any revenue floors established with contracting party.

Value proposition

Iwi can speed resource consent and offer local 'ownership' of the asset for a period. Government likely to insist on eventual ownership of national roads.

Potential for co-financing with national and local government agencies.



Transport Construction- International Example

| Example project types | Size | Structures | Risks | Terms | Returns or revenue |
|-----------------------|--|---------------------------------|--|---|--|
| Highway toll roads | \$7m+ depending on length and complexity | Consortium for design and build | Construction and planning risks borne by construction party Demand risks (drivers don't use it) shared by finance partner and govt. | Fixed period of tolling with price regulation and guaranteed revenue floors | <u>To capital:</u> \$2 one-way charge for \$300-400m project, assuming 65 cent collection costs |

Worked Example: Transport – Generic Toll Asset

Asset Key Return and Risk Characteristics

This example includes the financing and ownership of a generic tolling asset.

Tolling assets are a quasi-market good with strong potential for PPP or co-financing. Government likely to insist on eventual ownership of the asset.

Recent examples include:

– 7.5km Northern Gateway, Auckland (\$356m total, incl.1\$58m of private capital)¹⁰

– 7km Weiti Toll Road (\$158m, incl. 66m of private capital).¹¹ Expected to collect \$43.8m Net Present Value (NPV) in net cash flow from tolls.

Iwi, as the owner of the asset would derive returns through a mix of government rent payments and toll revenues. More reliance on tolls entails greater demand risks and, therefore, higher expected returns.

Tolling is generally only used to cover a portion of the total cost. A toll also needs to be low enough to encourage people to use the road, whilst raising enough to cover direct costs, meet interest charges and repay debt.

Example \$58m toll bridge

Key assumptions are; 6,300 vehicles per day use the bridge, a \$3 one-way average toll; Crown rents equate to 46% of revenue; a 6% return on capital is sought.

| Kopu Bridge Workings | NZ\$m | Assumptions |
|-------------------------------------|--------------|--------------------------------------|
| Capital cost | \$58.0 | per NZTA forecasts 2009-12 |
| Return on capital | 6% | 5 year Government Stock yield + 50bp |
| Capital charge | \$3.5 | |
| Bridge operations & maintenance | \$0.5 | arbitrary |
| Toll operations and debt collection | \$0.5 | estimated |
| Operations charge | \$1.0 | |
| Return of capital | \$1.9 | say over 30 years |
| Total annual charge | \$6.4 | |
| Traffic volume (current) | 9,000 | vehicles per day |
| Volume with tolling | 6,300 | assume 70% of current volume |
| One way volume | 3,150 | |
| Average toll | \$3.00 | vehicles per year assumed (for cars) |
| Toll revenue | \$3.4 | |
| | 54% | |
| Crown top-up payment | \$3.0 | |
| | 46% | |



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