

New Zealand Government Broadband Investment Initiative

Draft proposal for comment

31 March 2009

Submissions are invited on the proposal contained in the enclosed Cabinet paper.

Submissions should be sent to:

Broadband investment submissions
ICT Regulatory Group
Energy and Communications Branch
Ministry of Economic Development
PO Box 1473
WELLINGTON

email: broadbandsubmissions@med.govt.nz

Submissions close at 5:00pm on 27 April 2009.

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1. Foreword by the Minister for Communications and Information Technology

The government wishes to create a step-change in the provision of broadband services by delivering on an aspirational goal of ultra-fast broadband for the majority of New Zealanders.

This is a key part of the government's wider strategy to increase New Zealand's global competitiveness, particularly compared to other OECD countries.

The government's broadband objective

The government's goal for broadband investment is to accelerate the roll-out of ultra-fast broadband to 75% of New Zealanders, concentrating in the first six years on priority broadband users such as businesses, schools and health services, plus green field developments and certain tranches of residential areas.

This will be supported by government investment of up to \$1.5 billion alongside additional private sector investment, and be directed to open-access infrastructure.

Key principles

The achievement of the government's broadband objective will be consistent with the following principles:

- making a significant contribution to economic growth;
- neither discouraging, nor substituting for, private sector investment;
- avoiding entrenching the position, or 'lining the pockets', of existing broadband network providers;
- avoiding excessive infrastructure duplication;
- focussing on building new infrastructure, and not unduly preserving the 'legacy assets' of the past; and
- ensuring affordable broadband services.

Context

I have considered various options for achieving the government's broadband objective in the light of the government's pre-election commitments, and have had discussions with a range of interested parties in a variety of contexts.

The result of this process is a detailed broadband investment proposal, which is set out in the enclosed Cabinet paper.

I have concluded that this proposal is most likely to best achieve the government's broadband objective. The proposal provides an opportunity for all parties to participate in the initiative in a competitive context.

Why ultra-fast broadband is critical for New Zealand

The government believes there is a significant gap between the broadband services the market in New Zealand is currently providing and the services New Zealand needs if it is to remain competitive into the future.

The government's broadband policy aims to bridge that gap, and to ensure that New Zealand has the competitive edge it needs in order to prosper.

The development of an ultra-fast broadband network will be critically important to New Zealand's growth prospects. It will provide New Zealanders with the base infrastructure that will support advanced broadband services, including high-speed, real-time internet connections to the world.

Access to ultra-fast broadband will give rise to new enterprise and innovation and spur increased productivity.

Fibre will deliver huge economic benefits for our country in terms of enhanced productivity, improved global connectivity, and enhanced capacity for innovation. Independent experts have estimated these benefits will be worth between \$2.4 billion and \$4.4 billion a year.

New Zealand's geographic isolation and the distance between us and our competitors has become even more significant as people think twice about the costs of travel and begin to think about carbon footprints. Ultra-fast broadband can help overcome these obstacles.

The government believes that ultra-fast broadband will enable New Zealand businesses to be in meeting rooms around the globe. Fibre to schools will greatly enhance teaching and learning, and will ensure New Zealand children have access to the same information at the same time as their peers around the world. Ultra-fast broadband can boost productivity in hospitals and aid medical research.

Another major benefit of ultra-fast broadband will be the opportunities for home businesses and for people to telecommute. The capability for more people to work from home in a true "at work" environment will help reduce pressure on New Zealand's roads and public transport systems.

In addition, ultra-fast broadband will provide the ability for small to medium enterprises, using software as a service, to have large company IT support without anybody on the premises. That means huge productivity advances.

There is also a strong likelihood of new applications being developed in the future that will require residential users to have fibre broadband connections to operate them effectively, particularly as increasing numbers of services are delivered digitally.

Public policy rationale

The rationale underlying the government's proposed investment approach is that, where public funding is invested in telecommunications infrastructure, the

government should direct that investment to areas where the market is not likely to deliver on commercial terms.

There is also a role for public investment where existing private sector investment programmes are not aligned with the government's desired timeframe for infrastructure deployment.

When the focus is on investment in a fibre-optic telecommunications network, the most significant capital investment is in the roll-out of the passive network infrastructure.

This refers to the physical deployment of fibre-optic cable and passive network equipment in underground ducts (or other suitable underground infrastructure) or on overhead poles across the coverage area. In many cases existing ducts are not available, so new ducting needs to be deployed, involving significant civil works costs.

Investment approach

Against this background, I have concluded that the government's investment of up to \$1.5 billion should be focussed on achieving widespread roll-out of fibre-optic network infrastructure, sufficient to provide "dark fibre" and potentially other approved wholesale broadband services.

"Dark fibre" refers to fibre optic cable which has been laid in the ground (or on poles) but which has not yet been made active. Fibre is made active by adding optical electronics at each end, to provide a working service. ISPs and other telecommunications providers can purchase access to dark fibre, add their own electronics, and then use it to provide a retail service.

The government's approach will encourage the development of a widespread wholesale market for the provision of "dark fibre" network access services. The government investment will be in fibre networks that will operate only at the wholesale level, selling "dark fibre"-based services enabling telecommunications providers to design and specify their own downstream services. This approach will ensure that all decisions regarding active network technology options are left to private sector investors.

By keeping the new fibre business out of retailing, it will have no incentives to act anti-competitively, and there will be little need for regulation of its prices. In fact, there will be considerable initial incentives for it to keep the fibre rental prices low to facilitate use by downstream providers.

This approach ensures the least possible government involvement in the commercial operation of the fibre infrastructure, and at the same time maximises the involvement and skills of private sector partners, who are best placed to make commercial decisions.

This approach will also minimise market distortion from government involvement. The new network is intended to provide a service to the telecommunications industry, rather than compete directly with it. The new network will provide dark fibre services to any ISP or telecommunications service provider, and will operate as an infrastructure 'utility' at the passive level of the market. The aim is to provide a new fibre platform upon which service providers can develop their own services and create unique, innovative offerings.

Complementary initiatives

The government recognises that initiatives on the demand-side will be necessary in order to support the main supply-side initiative. In order to stimulate take-up of services offered over the new fibre network, the government will continue to encourage the readiness of all public sector agencies, and in particular the health and education sectors, to take full advantage of fibre network services.

In addition, the government will assess how best to facilitate access to and use of fibre cable deployment on telephone and electricity poles, local authority-owned passive infrastructure such as ducts, micro-trenching and fibre-optic cable “drops” from the street-side into customer premises. This may involve codes of practice or regulatory or legislative amendments. Relevant legislation includes the Resource Management Act, the Telecommunications Act, the Electricity Act and the Local Government Act. This will be a significant complementary work stream running alongside the main initiative.

The government is also committed to improving the state of New Zealand’s telecommunications infrastructure in rural areas. The government made a pre-election commitment to provide \$48 million to improve rural broadband, and we are currently developing options around this commitment and expect to make announcements regarding the direction of the government’s rural telecommunications policy in the near future.

The government will also be looking closely at the expansion of the ICT workforce, and developing digital literacy among adult New Zealanders.

Concluding remarks

I want to stress that, while this broadband investment initiative is government led and driven, this is very much a partnership with the industry.

This is an opportunity to make a major step-change in broadband infrastructure which the government believes will underpin New Zealand’s international competitiveness in future years, and for the benefit of future generations. It is a major undertaking and I am well aware of the amount of work ahead of us in achieving the government’s goal.

I look forward to continuing to work with the wider industry towards this common goal over the coming months and years.

Steven Joyce
Minister for Communications and Information Technology

2. Call for submissions

The government now seeks submissions on the proposal set out in the enclosed Cabinet paper.

Submissions are sought on two matters:

- the government's proposal as set out in the Cabinet paper. Submitters are asked to structure their submissions in line with the structure of the Cabinet paper, using the headings as they are set out in the document. Please reference specific paragraph numbers from the Cabinet paper where relevant; and
- whether submitters would be interested in participating in the proposed initiative, and to what degree or in what way submitters may wish to participate. The government would welcome any specific detail that could be provided on the likelihood of participation. Any such comment should be clearly marked as 'confidential and commercially sensitive' for the purposes of the Official Information Act 1982. Any other specific proposals would also be welcome.

Subject to confidentiality considerations, it is expected that all submissions will be published on the Ministry of Economic Development's (the **Ministry**) broadband investment web page (www.med.govt.nz/broadband).

Submissions should be sent to:

Broadband investment submissions
ICT Regulatory Group
Energy and Communications Branch
Ministry of Economic Development
PO Box 1473
WELLINGTON

email: broadbandsubmissions@med.govt.nz

Submissions close at 5:00pm on 27 April 2009.

10. Further questions and answers

The 'questions and answers' section of this document should be the first point of reference for questions arising from the government's proposal.

As noted above, the Ministry will be establishing a broadband investment web page. It is expected that this page will include a running list of 'live' questions and answers. Questions can be emailed to the above email address. Answers will be posted on the webpage as soon as is practicable following receipt of questions.

The Ministry advises all interested parties to regularly check the broadband investment web page for updates.

10. Official Information Act 1982

The content of submissions provided to the Ministry of Economic Development (the **Ministry**) may become subject to public release under the Official Information Act 1982. Please advise if you have any objection to the release of any information contained in a submission, and in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information. Confidential information should be clearly marked. The Ministry will take into account all such objections when responding to requests for information on submissions to this document under the Official Information Act 1982.

11. Privacy Act 1993

The Privacy Act 1993 establishes certain principles with respect to the collection, use, and disclosure of information about individuals by various agencies including the Ministry. It also governs access by individuals to information about themselves held by agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry only in conjunction with consideration of matters covered by this document. Please clearly indicate in your submission if you do not wish your name to be included in any summary of submissions that the Ministry may publish.

3. Broadband investment Cabinet paper

OFFICE OF THE MINISTER FOR COMMUNICATIONS AND INFORMATION TECHNOLOGY

The Chair
CABINET ECONOMIC GROWTH AND INFRASTRUCTURE COMMITTEE

BROADBAND INVESTMENT INITIATIVE

PROPOSAL

- 1 This paper sets out the objectives, and proposes a structure, process and timetable for the implementation of the government's \$1.5 billion broadband investment initiative.
- 2 The proposal set out in this Cabinet paper takes into account discussions by the Minister for Communications and Information Technology with a range of interested parties and consideration of options and proposals for achieving the government's objective. The approach set out in this paper will provide an opportunity for all parties to participate in the initiative in a competitive context.

EXECUTIVE SUMMARY

Objective

- 3 The government's goal for broadband investment is to accelerate the roll-out of ultra-fast broadband to 75% of New Zealanders¹. This is referred to as the **government's objective** in this paper.
- 4 While there is a range of possible technologies for the delivery of ultra-fast broadband, the primary focus of the government's objective is on fibre-optic technology. It is widely accepted that fibre is capable of providing the highest data throughput speeds, and fibre represents the most 'future-proof' technology available at this time.
- 5 The initial goal is to make fibre available to "priority users" such as businesses, schools and health services, plus green field developments and certain tranches of residential areas, within the first six years of operation, and the

¹ For the purposes of this initiative, 75% of New Zealanders means the population of the country's 25 largest cities and towns, down to the size of Oamaru.

secondary goal is to make fibre available to 75% of the population within ten years.

Proposal

Crown-owned investment company

- 6 The government will establish a Crown-owned investment company (“Crown Fibre Investment Co” or **CFIC**). The CFIC will function as the vehicle for investing the government’s \$1.5 billion.
 - The CFIC will invest, alongside private sector² co-investors, in regional fibre companies (“Local Fibre Cos” or **LFCs**) that will deploy and provide access to fibre-optic network infrastructure in the 25 cities and towns covered by the initiative.
- 7 The CFIC will operate an open, transparent and contestable process to select partner shareholders for LFCs. It will seek proposals based on clear criteria.
 - Selection criteria will be focused on several aspects – the amount of additional fibre coverage being proposed, the proposed capital structure (including the parties’ relative capital contribution requirements), the commercial viability of the proposal, consistency with government objectives, and the track-record of the partner.
- 8 Aggregated proposals covering any number or combination of regions will be allowed. That is, while proposals will be sought for 25 regions, LFCs may be formed on a smaller number of regions.
- 9 The intention is to operate a contestable process, to encourage partners to provide attractive and detailed proposals so that the CFIC is able to make comparisons between proposals. However, this should not be a ‘once-only, all-or-nothing’ process. While the CFIC must operate an initial request-for-proposals process, it may negotiate with partners, consider ‘staged’ proposals and request further proposals periodically. The CFIC will not be expected to disburse the full \$1.5 billion initially, but will have the ability to reserve funding for future rounds of proposals.
- 10 The CFIC will manage the Crown’s investment on an ongoing basis. Its task will be to achieve the government’s public policy objectives, but it will have flexibility to take commercial decisions on investments.

² The phrase “private sector” is used loosely in this paper to refer to any non-central government partner, including local government.

Differential equity rights

- 11 For any given LFC, the selected partner (which could be made up of one or more parties) will co-invest in the LFC, along with the CFIC. Differential equity rights may apply that initially favour the partner.
- It is expected that the partner will offer both investment (by way of capital and/or assets) and the commercial and technical ability to deploy and operate a fibre network.
 - The government's shareholding may be concessionary, and in particular may be subject to a lower rate of return than the partner for an initial period (for example, up to ten years). These provisions will be negotiable.
- 12 There will be no government commitment or guarantees regarding the rate of return that partners will receive.
- 13 The proposed investment structure is summarised below:

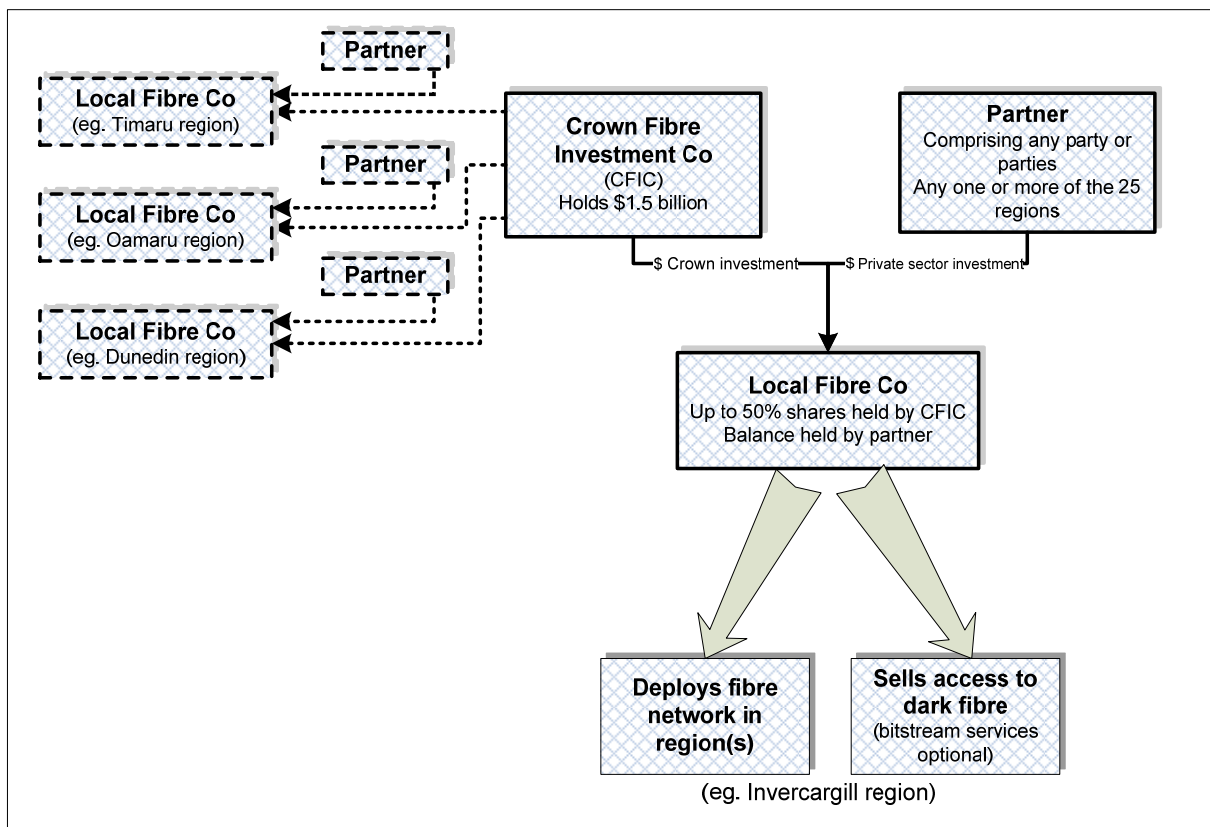


Diagram 1: Proposed investment structure

Wholesale-level only

- 14 The intention is that each LFC will operate purely as a “fibre infrastructure carrier”, providing wholesale access to dark fibre, and optionally providing other wholesale services³. It will not provide retail services.
- 15 For any given LFC, the LFC will be governed by a Board representing the CFIC and the partner’s shareholdings. LFC’s objective will be to deploy fibre in the relevant region, and to sell dark fibre services and other approved wholesale services that accelerate the delivery of competitive retail broadband services.
- LFC company constitutions will require them to operate in certain ways and to avoid certain activities (for example a restriction on providing retail services). A shareholders agreement between the CFIC and the partner will set out the specific objectives of an LFC.
- 16 All LFCs will be required to adhere to common technical and commercial standards in key areas such as open access, equivalence and interconnection (in particular, interconnection at neutral points of presence).

Cost of the CFIC

- 17 The operational costs of the CFIC are estimated to be in the order of \$4 million per year (possibly higher in initial years, and lower in subsequent years), and this will be a charge against the \$1.5 billion.

Involvement of partners that also own retail operations

- 18 As noted above, LFCs will not provide retail services. However, the government will not exclude *partners* that own or operate telecommunications retail operations, but such partners may not have the majority of voting control on the board of LFC (unless they divest themselves of any retail business).
- 19 Telecom, and other telecommunications operators with retail operations, will therefore be able to participate in the contestable selection process, subject to the above requirement.

Complementary measures

- 20 With the aim of reducing the cost of network deployment, it is proposed that officials (led by the Ministry of Economic Development) will be directed to report back on how best to facilitate access to and use of:
- a fibre cable deployment on telephone and electricity poles;

³ For example, a bitstream service. This refers to a managed, end-to-end wholesale IP transport service which does not require the wholesale customer to install its own active electronics. Compared to dark fibre, it is less flexible and the wholesale customer has less control over its management. These sorts of services may be attractive for telecommunications providers who cannot readily achieve the scale to justify investment in active electronics.

- b local authority-owned passive infrastructure such as ducts;
- c micro-trenching; and
- d fibre-optic cable “drops” from the street-side into customer premises.

21 This may involve codes of practice or regulatory or legislative amendments.

22 Areas outside the 75% coverage area for the government objective will be addressed pursuant to a separate process which may be associated with the review of the Telecommunications Service Obligations. The government is actively developing funding solutions for improved broadband service delivery in those parts of New Zealand not directly addressed in this initiative.

Risks

23 The main risks in this proposal are that:

- a there could be insufficient viable proposals, because the Crown offer is not sufficiently attractive;
- b the selection and negotiation process could be complex and difficult;
- c proposals could involve some overbuild (duplication) of existing fibre networks;
- d the business case for LFCs is expected to improve over the long term but there is a risk that some LFCs could fail to become profitable;
- e there is the potential that Telecom would be required, pursuant to the Operational Separation Undertakings⁴, to make investments that it would not otherwise make, given the government’s investment in a new fibre network;
- f there could be opposition to the proposal by existing telcos; and
- g the proposed funding could be insufficient to meet the coverage target, and that there is pressure for the government to increase its contribution.

24 The proposals in this paper seek to mitigate and manage these risks.

Timetable

25 The following summarised timetable indicates the key dates for progressing the initiative:

⁴ <http://www.chorus.co.nz/enhancing-the-broadband-network>.

Activity	Date
Recommendations approved by Cabinet	end March
Public release of Cabinet paper for comment	end March
Comments on Cabinet paper due	end April
Report-back to Cabinet on submissions and implementation details	end May
Appoint CFIC	mid June
RFP released by CFIC ⁵	mid August
Proposals due	mid October
Initial decisions by CFIC	Jan 2010
Further RFPs released by CFIC	To be determined by CFIC

⁵ All dates beyond this point are indicative, and will be subject to a range of factors.

BACKGROUND

- 26 This Cabinet paper covers the following topics:
- a objective and principles;
 - b how the government will achieve this objective;
 - c Crown-owned holding company – “Crown Fibre Investment Co”;
 - d eligibility of private sector⁶ partners (referred to as **partners** in this paper);
 - e Local Fibre Co;
 - f profit allocation;
 - g selection process and criteria;
 - h shareholders agreement;
 - i pricing and regulatory matters;
 - j demand-side initiatives;
 - k timetable;
 - l complementary measures; and
 - m risks.

COMMENT

Objective and principles

- 27 The government wishes to create a step-change in broadband by delivering on an aspirational goal of achieving ultra-fast broadband for the majority of New Zealanders. This is a key part of the government’s wider strategy to increase New Zealand’s global competitiveness, particularly compared to other OECD countries. A comparison of the status quo versus a fibre-to-the-home scenario is set out in the Appendix.

Overall objective

- 28 The government’s goal for broadband investment is to accelerate the roll-out of ultra-fast broadband to 75% of New Zealanders⁷, concentrating in the first six years on priority broadband users such as businesses, schools and health

⁶ The phrase “private sector” is used loosely in this paper to refer to any non-central government partner, including local government.

⁷ For the purposes of this initiative, 75% of New Zealanders means the population of the country’s 25 largest cities and towns, down to the size of Oamaru. This matter is discussed later in this document.

services, plus green field developments and certain tranches of residential areas. This is referred to as the **government's objective** in this paper.

- 29 This will be supported by government investment of up to \$1.5 billion alongside additional private sector investment, and be directed to open-access infrastructure.

Key principles

- 30 The achievement of this objective will be consistent with the following principles:
- a making a significant contribution to economic growth;
 - b neither discouraging, nor substituting for, private sector investment;
 - c avoiding entrenching the position, or 'lining the pockets', of existing broadband network providers;
 - d avoiding excessive infrastructure duplication;
 - e focussing on building new infrastructure, and not unduly preserving the 'legacy assets' of the past; and
 - f ensuring affordable broadband services.

How the government will achieve this objective

Public policy rationale

- 31 The rationale underlying the government's proposed investment approach is that, where public funding is invested in telecommunications infrastructure, the government should direct that investment to areas where the market is not likely to deliver on commercial terms⁸.
- 32 When the focus is on investment in a fibre-optic telecommunications network, the most significant capital investment is in the roll-out of the passive network infrastructure.
- This refers to the physical deployment of fibre-optic cable and passive network equipment in underground ducts (or other suitable underground infrastructure) or on overhead poles across the coverage area. In many cases existing ducts are not available, so new ducting needs to be deployed, involving significant civil works costs.

Investment approach

- 33 Against this background, the Minister has concluded that the government investment of \$1.5 billion should be focussed on achieving widespread roll-out

⁸ See, for example, *Developments in Fibre Technologies and Investment*, OECD Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy, 2008 for discussion.

of the fibre-optic network infrastructure, sufficient to provide “dark fibre” and potentially other approved wholesale broadband services.

- 34 “Dark fibre” refers to fibre optic cable which has been laid in the ground (or on poles) but which has not yet been made active. Fibre is made active by adding optical electronics at each end, to provide a working service. ISPs and other telecommunications providers can purchase access to dark fibre, add their own electronics, and then use it to provide a retail service. This is referred to as “lighting” the fibre. In very simple terms, this is the most “raw” access to the underlying infrastructure, and provides the best competition outcomes because the wholesale customer has full control and flexibility and has the ability to innovate in downstream services. However, there may be benefits from the provider itself lighting some fibres and providing a managed wholesale “bitstream” type of service, to enable improved economies for its wholesale clients.
- 35 The government’s approach will encourage the development of a widespread wholesale market for the provision of “dark fibre” network access services. The government investment will be in fibre networks that will operate only at the wholesale level, selling “dark fibre”-based services enabling telecommunications providers to design and specify their own downstream services. This approach will ensure that all decisions regarding active network technology options are left to private sector investors.
- 36 By keeping the fibre company out of retailing, it will have no incentives to act anti-competitively, and there will therefore be no need for initial price regulation of its services. In fact there will be considerable initial incentives for LFCs to keep the fibre rental prices low to facilitate use by downstream providers.
- 37 This approach ensures the least possible government involvement in the commercial operation of the fibre infrastructure, and at the same time maximises the involvement and skills of private sector partners, who are best placed to make commercial decisions.
- 38 This approach will also minimise market distortion from government involvement. The new network is intended to provide a service to the telecommunications industry, rather than compete directly with it. The new network will provide dark fibre services to any ISP or telecommunications service provider, and will be operating as an infrastructure ‘utility’ at the passive level of the market. The aim is to provide a new fibre platform upon which service providers can develop their own services and create unique, innovative offerings.

Summary of proposal

- 39 This proposal is based on a Crown-owned investment company (“Crown Fibre Investment Co” or **CFIC**) that will co-invest with private sector partners in new passive fibre-optic networks in the regions covered by the initiative.

- 40 The CFIC will operate a competitive process to determine its various partner shareholders, by seeking proposals from the market. The focus of this process will be on identifying the proposals most likely to achieve the government's overall objective. Various regional companies will then be established to deploy and provide wholesale access to dark fibre.
- 41 Selected partners will co-invest in a local fibre company ("Local Fibre Co" or **LFC**), along with the CFIC. Differential equity rights may apply at different stages of the roll-out that favour the partner, subject to negotiation.
- 42 There will be no government commitment or guarantees regarding the rate of return that partners will receive.
- 43 The CFIC will manage the Crown's investment on an ongoing basis. It will have flexibility to take commercial decisions on appropriate regional investments, taking into account the government's public policy objectives.
- The CFIC will be required to achieve the initial goal of making fibre available to priority users such as businesses, schools and health services, plus green field developments and certain tranches of residential areas, within the first six years, and a secondary goal of making fibre available to 75% of the population within ten years.
- 44 While the \$1.5 billion investment is primarily driven by public policy objectives, it will also have a commercial focus. Thus, a key feature of this approach is that the government's financial contribution will be by way of an *investment*, as opposed to being by way of a grant or suspensory loan. The primary objective is to accelerate the roll-out of additional fibre, but the government also intends to take a share of the benefits in the event that any of the fibre operations become highly profitable in the future.
- 45 The proposed structure is summarised below:

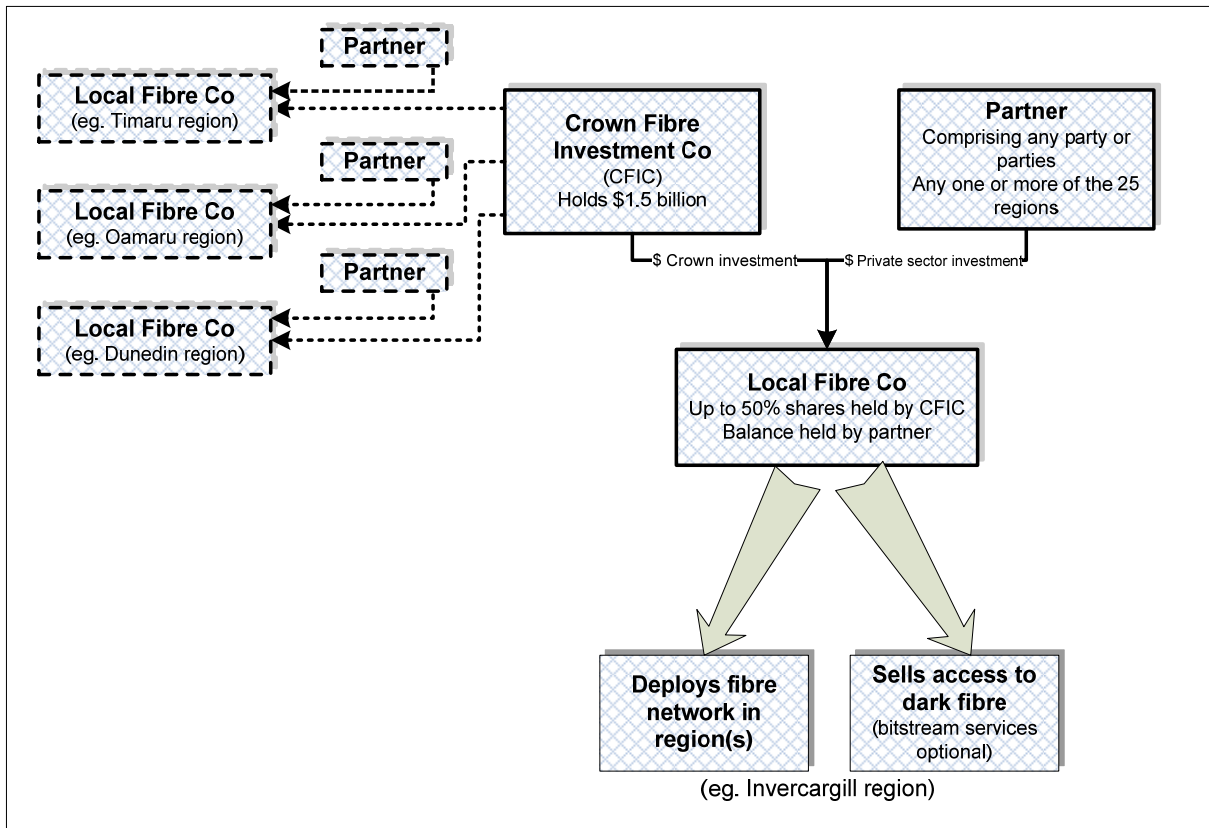


Diagram 1: Proposed investment structure

- 46 The intention is that each LFC will operate as an “infrastructure carrier”, providing wholesale access to dark fibre, and optionally providing wholesale services⁹. LFCs will not provide retail services. This will ensure service providers can access dark fibre on an open and transparent basis.
- 47 All LFCs will be required to adhere to common technical and commercial standards in key areas such as open access, equivalence and interconnection (in particular, interconnection at neutral points of presence¹⁰).
- 48 The details of each main aspect of this proposal are discussed in turn below.

⁹ For example, a bitstream service. This refers to a managed, end-to-end wholesale IP transport service which does not require the wholesale customer to install its own active electronics. Compared to dark fibre, it is less flexible and the wholesale customer has less control over its management. These sorts of services may be attractive for telecommunications providers who cannot readily achieve the scale to justify investment in active electronics.

¹⁰ The phrase “neutral points of presence” refers to physical interconnection points which are open to any network provider. The aim will be to ensure that the networks built by the different LFCs will interconnect with all other network providers, and with each other, to exchange data traffic.

Crown-owned holding company – “Crown Fibre Investment Co”

- 49 First, the government will establish a Crown-owned holding company, the CFIC.
- 50 The objectives of the CFIC will be as follows:
- a to achieve the government’s objective and to maximise the availability of additional fibre to potential end-users; and
 - b subject to meeting the primary objective in (a) above, to operate on a commercial basis.
- 51 The tasks of the CFIC will be to:
- a select joint venture partners for the LFCs by way of a competitive process, based on criteria set down by the government;
 - b appoint board members to LFCs (in proportion to the CFIC’s shareholding) to best achieve the government’s objective;
 - c disburse government funding by way of investment in LFCs; and
 - d monitor performance of, and manage the government’s investment in, LFCs.
- 52 In terms of form and governance, the CFIC will be a wholly-owned Crown company. It will not be a state-owned enterprise, because it has partly non-commercial objectives. The Board of the CFIC will be comprised of four or five directors with relevant commercial and technical expertise. The Board will be appointed by, and accountable to, the Minister of Finance and the Minister for Communications and Information Technology.
- 53 Officials have advised that the most appropriate legal form for the CFIC would be as a Public Finance Act 1989 Schedule 4 company – as this form enables a degree of Ministerial control, and allows the appropriate parts of the Crown Entities Act 2004 to be applied to the company.
- 54 The CFIC will also require a secretariat, estimated at around five to ten full time staff. In addition, it will need to contract for specialist advice such as legal, investment banking and technical services, especially during initial contracting phases. The operational costs of the CFIC are estimated to be in the order of \$4 million per year (possibly higher in initial years, and lower in subsequent years), which should be a charge against the \$1.5 billion.

Eligibility of private sector partners

- 55 Subject to the next paragraph, there will be no restrictions on the eligibility of parties to participate as partners in LFCs.
- 56 There will be one exception, applying where any party making a proposal owns or operates a telecommunications retail operation. The concern is that,

in this case, there is a risk that the partner will have an incentive to manage an LFC in a way which favours its own retail operation. In this event, the party either:

- a must fully divest itself of the retail operation; or
- b may not appoint the majority of directors to the Board of the relevant LFC and the chair of the LFC Board must be an independent chair (based on the Companies Act 1993 criteria) agreed to by all shareholders.

Local Fibre Cos

- 57 Following selection of proposals by the CFIC, it and each partner (or partners) will establish a commercial vehicle, LFC. This could be a new, limited liability company, or an existing company. This will be the operational company that will deploy and sell access to fibre in a particular region or regions.
- 58 The overriding objectives of LFCs will be as follows:
- a to maximise the availability of additional fibre infrastructure to potential end-users and retail service providers within the relevant region;
 - b to comply with the matters agreed between the CFIC and the partner in the shareholders agreement; and
 - c subject to (a) and (b) above, to operate on a commercial basis.
- 59 It is expected that the specific commercial objectives for each LFC will be contained in a shareholders agreement entered into at the time of establishing the LFC. The agreement will cover matters such as:
- a coverage targets;
 - b capital requirements;
 - c performance milestones; and
 - d profit policy.
- 60 Voting rights, the profit policy and shareholding sale and assignment restrictions will also be included in the shareholders agreement – these matters are discussed further below. The contribution of the partners may be a combination of assets, capital, debt or technical expertise.
- 61 The constitution of LFC, which binds the activities of the company, will also contain a number of the broad limitations on what LFC must, may and must not do, reflecting the government’s public policy “bottom lines”:
- a LFC *must*:
 - i deploy additional fibre in the relevant region;

- ii provide open access to the network on equivalent terms; and
 - iii provide wholesale access to dark fibre on the network.
- b Subject to the obligations in sub-paragraph (a), LFC *may*:
- i provide a wholesale bitstream service; and
 - ii enable the provision of “interim” solutions by wholesale customers, such as wireless last mile or ADSL2+ or VDSL2 solutions¹¹, provided that this is consistent with the LFCs achieving the government’s objective of fibre-to-the-home within ten years¹²; and
 - iii subject to the CFIC’s approval, provide any other wholesale broadband service.
- c LFC *must not* provide retail services.

62 In terms of form and governance, LFCs will have two classes of shares:

- a “A” shares – to be held by the CFIC; and
- b “B” shares – to be held by the partner.

63 Subject to the exception that applies where the partner owns or operates a retail operation, as described above, voting rights to appoint directors will be in proportion to the parties’ relative shareholdings. The CFIC will likely appoint one or two directors on all LFC boards, along with other directors selected from a small pool depending on the specific requirements of particular LFCs. There will not be a need for a large number of directors.

Profit allocation

64 A key aspect of the arrangement will be the profit allocation policy of LFCs.

¹¹ Telecommunications providers will have the ability to purchase dark fibre from LFCs and provide wireless last mile or VDSL2 services to adjacent areas. Wireless last mile could include a Wi-Max access point with end-users receiving the service on wireless modems in their premises; VDSL2 could for example be provided by Telecom over its local copper loop into customer premises in adjacent areas. This option may also be important for many retail service providers that are still investing in wireless and wireline distribution technologies and who wish to offer their services in new territories via access to the wholesale fibre infrastructure.

¹² Strictly speaking, this provision is redundant. If an LFC sells dark fibre, then it has no control over the downstream service provided by its wholesale customer. As such, the LFC will not have any role in enabling interim solutions. By default, these interim solutions will be available – anyone can use dark fibre as an input into any downstream service they wish. However, this provision makes it clear that the fibre initiative is not incompatible with Telecom’s current investment strategy to roll out ADSL2+/VDSL2.

- 65 Profit allocation in LFCs may be based on a differential equity structure, which may entail initial preference being given to the private sector co-investor. This is intended to be the incentive for attracting investment from the private sector.
- 66 “A” shares, to be held by the CFIC, may entail:
- a concessionary equity rights – in particular, the government’s shareholding may be subject to a lower rate of return than that of the partner; and
 - b after 10 years, “A” shares will revert to normal shares.
- 67 These provisions will be negotiable following receipt of proposals.
- 68 “B” shares, to be held by the partners, will entail normal share rights under the Companies Act 1993. Note that there will be no Crown guarantees regarding returns to partners.
- 69 Decisions will be required on the CFIC’s policies with regard to:
- a re-investment of any dividends;
 - b ‘staged’ proposals;
 - c ability to provide further capital contributions; and
 - d whether there are any “stop loss” provisions relating to the extent of losses.

Rationale

The aim of this approach is to:

- make the offer attractive to potential partners, by providing capital on concessionary terms (subject to negotiation), in order to achieve the government’s public policy objectives;
- provide incentives for the LFC to operate commercially; and
- ensure that the Crown shares in commercially successful operations in the future.

Selection process and criteria

- 70 The CFIC will solicit partner proposals by way of an open, transparent contestable process, with decisions made according to clear criteria.

- 71 The process will be aimed at both:
- a selecting a partner proposing the maximum amount of additional fibre infrastructure in return for concessionary government investment; and
 - b leveraging the maximum amount of private co-investment possible in the circumstances.

Process

72 It is proposed that the CFIC issues a request for proposals (**RFPs**), with a three month period for preparation and submission of proposals. This would be followed by a short period of negotiation where required. An alternative would be to operate a two-stage process involving expressions of interest and an RFP.

73 The intention is to operate contestable processes for partner selection, to encourage partners to provide attractive and detailed proposals so that the CFIC is able to make comparisons between proposals.

- 74 However, this should not be a 'once-only, all-or-nothing' process, because:
- a there will be some regions where there are no attractive proposals, at least initially;
 - b commercial and technological developments may lead to higher quality proposals at later dates; and
 - c it is likely that some proposals will be 'staged' (with network roll-out being structured in stages, where subsequent stages are dependent on the commercial success of earlier stages).

75 Accordingly it is proposed that the CFIC:

- a must operate a competitive RFP process initially;
- b may:
 - i negotiate with particular partners;
 - ii accept 'staged' proposals, provided that the overall proposal is consistent with achieving the government's objectives. Where the CFIC accepts staged proposals, it must ensure that it has flexibility to change the partnership arrangements at the end of major stages; and
 - iii operate further RFP processes at appropriate intervals (for example, one to two years).
- c will not be required to enter into contracts in regions where no attractive proposals are put forward, and may retain funding for later proposals, and/or later stages of particular proposals.

Regions

- 76 The initial RFP will be in relation to each of the regions making up 75% of the population. The regions have been determined based on the population of the largest 25 cities and towns in New Zealand. These are the smallest areas for which proposals will be considered. The regions are:

Region	Population	% of population
Auckland ¹³	1,230,606	29.5
Christchurch	360,768	8.7
Wellington ¹⁴	360,627	8.7
Hamilton Zone	155,262	3.7
Napier and Hastings	118,404	2.9
Dunedin	110,997	2.7
Tauranga	108,882	2.6
Palmerston North and Fielding	89,922	2.2
New Plymouth and Hawera	60,057	1.5
Kapiti and Levin	56,571	1.4
Nelson	56,364	1.4
Rotorua	53,766	1.3
Whangarei	49,080	1.2
Invercargill	46,773	1.1
Wanganui	38,988	0.9
Gisborne	32,529	0.8
Cambridge and Te Awamutu	29,646	0.7
Blenheim	28,527	0.7
Timaru	26,886	0.6
Taupo	21,291	0.5
Masterton	19,494	0.5
Whakatane	18,204	0.4
Ashburton	16,836	0.4
Tokoroa	13,530	0.3
Oamaru	12,681	0.3
TOTAL	3,116,601	75.0

Diagram 2: Estimated population of cities and towns included in coverage area¹⁵

¹³ Including the following “zones” as defined by Statistics New Zealand: Central Auckland (includes Auckland City), Southern Auckland (including Manukau City), Northern Auckland (including North Shore City), Western Auckland (including Waitakere City). Also includes Pukekohe.

¹⁴ Includes the following “zones”: Wellington Central (including Wellington City), Upper Hutt (including Upper Hutt City), Lower Hutt (including Hutt City) and Porirua City.

¹⁵ Based on Statistics New Zealand 2006 Census Data.

- 77 Aggregated proposals covering any number or combination of regions will be allowed. That is, while the RFP will be let for 25 regions, LFCs may be formed on a smaller number of regions.

Criteria

- 78 The criteria the CFIC must apply when selecting proposals will be as follows:

Selection criteria

The proposal that is likely to best achieve the government's objective, taking into account:

- a) the "additionality" of the proposal, defined as:
 - i. the number of potential end-users¹⁶ able to benefit from new fibre who cannot readily access¹⁷ existing fibre¹⁸; plus
 - ii. the number of potential end-users able to benefit from new fibre who, while able to access existing fibre, cannot do so on competitive terms¹⁹;
- b) proposed capital structure:
 - i. amount of new capital invested by the partner;
 - ii. amount of capital sought from the CFIC; and
 - iii. proposed shareholding;
- c) commercial viability of the proposal and assessment of the business case;
- d) ability of proposed network topology to support unbundled fibre access²⁰;

¹⁶ This includes any residential, commercial, health, education or other government end-user.

¹⁷ For these purposes, "readily access" means being able to obtain a fibre connection, as part of a current retail or wholesale offering.

¹⁸ "Existing fibre" includes the fibre extensions Telecom is required to deploy pursuant to its Operational Separation Undertakings (<http://www.chorus.co.nz/enhancing-the-broadband-network>). As a requirement of the Operational Separation Undertakings, Telecom will be ensuring that 60% of existing PSTN lines will be capable of 20Mbps, 84% will be capable of 10Mbps, and 89% will be capable of 5Mbps, by 31 December 2011.

¹⁹ In general terms, it is expected that overbuild by an LFC can be avoided by accessing the existing fibre for the relevant network segments. However, where such access cannot be gained, then some overbuild may be necessary. The intention is that, in that case, the overbuild will count towards the "additionality".

- | |
|--|
| <ul style="list-style-type: none"> e) track-record of the partner; and f) the CFIC's target of achieving a roughly proportionate spread of the available government funds across regions, and its ability to be flexible regarding the time span across which it spends the funding. |
|--|

79 The government expects initial proposals to provide coverage to a substantial proportion of designated health and education end-users²¹ within the region, plus concentrated business areas (taking into account the criteria above regarding overbuild).

80 This criteria will be made publicly available as part of the RFP documentation.

Shareholders agreement

81 The shareholders agreement (or joint venture agreement, depending on legal advice) will be a contract between the CFIC and the selected partner for each LFC that is to be established. As such, the CFIC will be entering into a number of separate shareholder agreements (one for each LFC).

82 It is an agreement documenting the partners' relationship as shareholders of LFC, and governs both the overall parameters of the arrangement and the specific detail of the agreed commercial venture via LFC.

83 There will be a model shareholders agreement prepared and made public (via the RFP documentation) in advance of the partner selection process. Certain key matters will be "set in stone" (and common to all shareholder agreements entered into by the CFIC), but some specific content in each shareholder agreement will reflect the outcome of the selection process and the specific proposal agreed with each partner.

84 An important issue for government will be to ensure the enforceability of the commitments entered into by the partner with the CFIC, for example ensuring the agreed coverage target is met. Mechanisms to ensure this will be as follows:

- a CFIC capital contributions will be tied to delivery of certain milestones by the partner and/or the LFC, and to continued capital contributions by the partner; and
- b normal contractual remedies will apply.

²⁰ Some network topologies (for example Point-to-Point optical networking) support more favourable competition outcomes than others (for example xPON) due to the ability to unbundle individual fibres, and so will be treated more favourably in the assessment process.

²¹ Further work will be required to define which institutions and entities fall within "designated health and education end-users".

- 85 The shareholders agreement will also provide for the CFIC to introduce new partners if and when the original partner(s) is unable or unwilling to meet the agreed objectives or commit to further roll-out.
- 86 Standard joint venture provisions will apply, for example:
- a the CFIC's consent will be required for any sale or assignment of shares by the partner, and vice versa; and
 - b the CFIC will have the first right of refusal on any sale of shares by the partner, and vice versa.
- 87 "A" shares will convert to normal shares after a period of 10 years (this period will be negotiable).

Pricing and regulatory matters

- 88 There will be no restrictions or requirements on pricing of any services provided by LFCs. Pricing will be determined by commercial decisions of the LFCs' Boards.
- 89 The LFCs, like any other company, will be subject to the existing regulatory regime. This comprises the Telecommunications Act 2001 and the Commerce Act 1986 (Part 4 in particular).

Rationale

The rationale of this approach is that:

- LFCs will have incentives to price commercially (to ensure uptake of services and cashflow);
- LFCs' requirement to operate on an open access basis, and not to provide retail services, minimises incentives to operate anti-competitively;
- Schedule 3 of the Telecommunications Act 2001 provides for the Commerce Commission to investigate whether certain services should be subject to regulation under that Act. Part 4 of the Commerce Act 1986 provides for regulation of excessive prices in situations where there is no competition and the benefits of regulation substantially exceed the costs. This legislation could be called on in the event of any anti-competitive or monopolistic conduct. In both cases, the government may not act without a Commerce Commission recommendation to regulate, and government agreement is required to introduce any new regulation; and
- there will be no "regulatory holiday" for the LFCs – that would require legislation and would be inconsistent with the

government's overall approach to competition policy and law.

Demand-side initiatives

- 90 In order to stimulate take-up of services offered over the new fibre networks, the government will continue to facilitate the readiness of all public sector agencies, and in particular the health and education sectors, to take full advantage of fibre network services.
- 91 The government recognises a need for funding for initial connection and on-going costs, and national standards to make ultra-fast broadband useful to health and education users. This will in turn support the ongoing demand of these users for services delivered over ultra-fast broadband.
- 92 The government has made a commitment that \$150 million of the total \$1.5 billion broadband investment will be spent on making schools broadband ready. The initial \$34 million tranche of this funding will be spent on upgrading the internal networks of some schools.
- 93 Prior to the 2009 Budget Round, the Ministers for Communications and Information Technology, Education and Finance will resolve the details of how the remaining \$116 million of this \$150 million will be spent.
- 94 A substantial further investment and re-prioritisation of current spend will be required by government to fully prepare the health and education sectors to use ultra-fast broadband effectively.
- 95 The Ministers for Communications and Information Technology, Health and Education will continue work on assessing sector needs for broadband readiness, and plan to report back to Cabinet in June this year.

Timetable

- 96 The following is an indicative timetable:

Activity	Date
Recommendations approved by Cabinet	end March
Public release of Cabinet paper for comment Parallel workstreams begin on implementation details – in particular establishing CFIC, executive search, and preparing tender documents and a model LFC constitution and shareholders agreement	end March

Comments on Cabinet paper due Officials' analysis of comments and report to Minister for Communications and Information Technology Preparation of Cabinet report-back paper	end April
Report-back to Cabinet on submissions and implementation details	end May
Appoint CFIC	mid June
Report-back to Cabinet on broadband readiness in the health and education sectors	end June
RFP released by CFIC ²²	mid August
Proposals due	mid October
Initial decisions by CFIC	January 2010
Further RFPs released by CFIC	To be determined by CFIC

Complementary measures

Environmental and access issues

97 Existing infrastructure (above and below ground) can be a valuable part of future fibre deployment, and its availability can reduce the cost of network deployment. Deployment and use of such infrastructure is governed by several pieces of legislation (for example the Resource Management Act 1991, the Telecommunications Act 2001, the Electricity Act 1992 and the Local Government Act 2002) and regulations. It is proposed that the Ministry of Economic Development, in consultation with the Ministry for the Environment, the Department of Internal Affairs and The Treasury should be directed to report back on how best to facilitate access to, and use of:

- a fibre optic cable deployment on telephone and electricity poles;

²² All dates beyond this point are indicative, and will be subject to a range of factors.

- b local authority-owned passive infrastructure such as ducts;
- c micro-trenching; and
- d fibre optic cable “drops” from the street-side into customer premises.

98 This may involve codes of practice or regulatory or legislative amendments.

Rural broadband

99 In pre-election statements, the government indicated that a rural broadband initiative equating to \$48 million would be adopted, in addition to the \$1.5 billion initiative.

100 Areas outside the 75% coverage area for the government objective will be addressed pursuant to a separate process which may be associated with the review of the Telecommunications Service Obligations. The government is actively developing funding solutions for improved broadband service delivery in those parts of New Zealand not directly addressed in this initiative.

101 It is also expected that the new network will gradually expand beyond 75% of the population, becoming available to an increasing percentage of New Zealanders over time.

Risks

The following section notes (at a high level) some of the risks of this proposal.

Few viable proposals

102 The main risk is that there could be insufficient viable proposals, because the Crown’s offer is not sufficiently attractive – due to not offering a guaranteed return to partners²³, difficulties in obtaining capital in the current environment, or because the business case is too weak (for example if the price that would have to be charged to consumers to achieve a satisfactory return is significantly greater than the resulting value derived by consumers, take-up will likely be deterred).

103 This risk has an ongoing component: it is likely that the various LFCs will have differing agreed coverage targets and timeframes for meeting these, meaning that “phase 2” proposals may need to be sought at various times in the future.

²³ Some potential partners (for example electricity and gas utilities) may also be concerned about risks relating to:

- (i) allocation of common costs by the Commerce Commission between their regulated and unregulated activities, and the possibility that they will need to reduce their regulated prices (for example, for electricity lines). This issue is being addressed under the new Part 4 of the Commerce Act 1986, which requires the Commission to set rules for allocation of common costs by mid-2010, provides guidance on principles for doing so, and provides rights of appeal to the High Court; and
- (ii) Telecom potentially lowering its prices on a street-by-street basis where new fibre is deployed.

- 104 This is an inherent risk in the approach being taken, though the government's proposal has been designed to minimise this risk by providing an attractive investment structure for private sector investors (while ensuring a long-term return for the government in certain circumstances).

Complex selection process

- 105 The selection of partners and preferred projects could be complex and difficult. It will be difficult to compare unlike proposals, such as regional and multi-regional proposals, proposals with and without 'staging' and proposals with differing capital structures and requirements.
- 106 In addition, there is an increased risk of 'rent seeking' (bids above cost) occurring within a regional tender process of this type – particularly in smaller regions, where competition may be more limited.

Significant overbuild occurs

- 107 There is a risk that proposals could involve some overbuild (duplication) of existing fibre networks. It is expected that, in many cases, overbuild can be avoided by LFCs by seeking access to existing fibre where there would otherwise be duplication. However, in some cases this access may not be readily available on commercial terms, and so some overbuild may be necessary. While this would provide additional facilities-based competition, in respect of the duplicated network there would be low levels of "additionality", and the government's investment in that instance would be going where the market is already likely to deliver.

LFCs fail to become profitable

- 108 The business case for LFCs is expected to improve over the long term but there is a risk that some LFCs could fail to become profitable.
- 109 In addition, Telecom may believe that the initiative will compete directly with the Chorus infrastructure thereby reducing revenues and shareholder value. A competitive response by Telecom could undermine investment confidence by potential LFC partners.
- 110 Again, this is an inherent risk in this initiative. However the government's approach is designed to help LFCs move towards profitability in time.

Telecom is required to make investments that it would not otherwise make, given the changed environment

- 111 There is the potential that Telecom could be required, pursuant to the Operational Separation Undertakings, to make investments that it would not otherwise make given the roll-out of new fibre. As noted above, Telecom is required to extend fibre into its network and to shorten the copper loop lengths

to certain agreed targets by December 2011. Telecom will be providing ADSL2+ and VDSL2²⁴ services.

- 112 Services able to be delivered over fibre are superior to those over ADSL2+ and VDSL2, and there is a risk that the value of Telecom's investment may be eroded as customers move to the fibre network. As such, Telecom may not have made this investment had it known the environment would change.
- 113 However, the government can help mitigate this risk. Telecom will be able to participate in the contestable process and so is able to access the government investment. In addition, Telecom will be able to access dark fibre on the new network. It is also able to seek a review of its Operational Separation Undertakings.

Opposition from telcos

- 114 There is a possibility of opposition to the proposal by existing telcos (in particular, Telecom, Vodafone and TelstraClear), which may see the proposal as undermining and competing with their investments and plans. While this is a risk, it should be noted that all telcos will be able to submit proposals for some or all of the regions and the available investment, and all will be able to access dark fibre on the new network.

Insufficient funding

- 115 There is a risk that the proposed funding could be insufficient to meet the coverage target, and that there is pressure for the government to increase its contribution. However, the initiative is designed to incentivise funding from other parties, and it is recommended that the government's contribution is capped at \$1.5 billion over six years.

CONSULTATION

- 116 This paper has been prepared by the Ministry of Economic Development, in consultation with The Treasury. The Minister for Communications and Information Technology has held detailed discussions with a wide range of parties on how best to achieve the government's objectives.

FISCAL IMPLICATIONS

- 117 The fiscal impact of this initiative will be a maximum of \$1.548 billion over six years, being \$1.5 billion to accelerate the provision of ultra-fast broadband to 75% of the population, and \$48 million to support rural broadband. This total amount will be off-set by reprioritisation of the previous government's \$340 million Broadband Investment Fund.
- 118 Further detail on the fiscal impact, such as the split between operational funding and capital funding, the funding of project costs and the spread of funding over six years, will be developed during the Budget process.

²⁴ ADSL2+ and VDSL2 are technologies enabling the delivery of high-speed broadband over the existing copper access network.

- 119 Prior to the 2009 Budget Round, the Ministers for Communications and Information Technology, Education and Finance will resolve the details of how the remaining \$116 million of the \$150 million on broadband for schools will be spent.

HUMAN RIGHTS

- 120 There are no human rights implications of this paper.

LEGISLATIVE IMPLICATIONS

- 121 At this stage there are no legislative implications of the proposals in this paper.

REGULATORY IMPACT ANALYSIS

- 122 A Regulatory Impact Analysis has not been prepared, because there are no regulatory or legislative implications of the proposals in this paper at this stage.

PUBLICITY

- 123 There will be significant publicity around this initiative. The Minister for Communications and Information Technology will make a public statement describing the government's goals for the broadband investment initiative, the proposal and the process for its implementation.

RECOMMENDATIONS

- 124 It is recommended that the Committee:

Objective

- 1 **Note** that the government made a pre-election commitment to invest \$1.5 billion to accelerate the roll-out of ultra-fast broadband to 75% of New Zealanders;
- 2 **Agree** that, for the purposes of this initiative, 75% of New Zealanders means the population of the country's 25 largest cities and towns, down to the size of Oamaru;
- 3 **Agree** that the government investment of \$1.5 billion should be focussed on achieving widespread roll-out of the passive fibre-optic network infrastructure;
- 4 **Note** that the rationale underlying the government's approach is to direct its investment only to areas where the market is not likely to deliver on commercial terms;
- 5 **Note** that, when the focus is on investment in a fibre-optic telecommunications network, the most significant capital investment is in the roll-out of the passive network infrastructure;

Goals

- 6 **Agree** that the initial goal is to make fibre available to priority users such as businesses, schools and health services, plus green field developments and certain tranches of residential areas, within the first six years, and the secondary goal is to make fibre available to 75% of the population within ten years;

Crown-owned investment company

- 7 **Agree** that the government should establish a Crown-owned investment company (“Crown Fibre Investment Co” or **CFIC**), which will function as the vehicle for investing and managing the government’s \$1.5 billion investment;
- 8 **Agree** that the CFIC will invest, alongside private sector and local government co-investors, in regional fibre companies (“Local Fibre Cos” or **LFCs**) that will deploy and provide access to fibre-optic network infrastructure on a regional basis;

Partner selection

- 9 **Agree** that the CFIC will select partner shareholders for LFCs through open, transparent and contestable processes based on clear criteria;
- 10 **Agree** that requests for proposals (**RFPs**) for partners should be issued on the basis of 25 regions, but that any number or combination of regions may be proposed by potential partners;
- 11 **Agree** that the government will not exclude partners that own or operate telecommunications retail operations, but such partners may not have the majority of voting control on the board of an LFC, unless they divest themselves of any retail business;
- 12 **Note** that Telecom, and any other telecommunications operator with a retail operation, will therefore be able to participate in the contestable selection process, subject to the above requirement;
- 13 **Agree** that selection criteria will be focused on the amount of additional fibre coverage being proposed, the proposed capital structure, the commercial viability of the proposal, consistency with government objectives and the track-record of the partner;
- 14 **Agree** that while the CFIC must operate a competitive RFP process initially, it may:
- 14.1 negotiate with particular partners;
 - 14.2 accept ‘staged’ proposals, provided that the overall proposal is consistent with achievement of the government’s objectives; and

14.3 operate further RFP processes at appropriate intervals (for example, one to two years);

15 **Agree** that the CFIC should seek a rough balance in funding across the regions, but that, subject to meeting the government's objectives, it may delay investment in particular regions until suitable proposals become available;

Local Fibre Cos

16 **Agree** that, for any given LFC, the selected partner or partners will co-invest in the LFC, along with the CFIC;

17 **Note** that it is expected that the partner will offer both investment (by way of capital and/or assets) and the commercial and technical ability to deploy and operate a fibre network, while the government (via the CFIC) will contribute capital on a concessionary basis;

18 **Agree** that LFCs will operate as "fibre infrastructure carriers", providing wholesale access to dark fibre, and optionally providing wholesale bitstream and other approved wholesale services, but will not provide retail services;

19 **Agree** that all LFCs will be required to adhere to common technical and commercial standards in key areas such as open access, equivalence and interconnection (in particular, interconnection at neutral points of presence);

20 **Agree** that the government will provide concessionary equity finance, in particular by taking a lower rate of return than the partners for up to ten years;

21 **Agree** that the CFIC may negotiate alternative arrangements, consistent with the government's objectives;

22 **Agree** that there will be no government commitment or guarantees regarding the rate of return that partners will receive;

23 **Note** that the cost of operating the CFIC is estimated to be in the order of \$4 million per year;

24 **Note** that \$150 million which has been allocated for making schools broadband ready:

24.1 is part of the \$1.5 billion; and

24.2 will prepare some schools for using broadband effectively, but that a substantial further investment and re-prioritisation of current spend will be required by government to fully prepare the health and education sectors to use ultra-fast broadband effectively;

- 25 **Invite** the Ministers for Communications and Information Technology, Health and Education to continue work on assessing sector needs for broadband readiness and to report back to Cabinet by 26 June 2009;

Complementary measures

- 26 **Direct** officials to report back to this Cabinet Economic Development And Infrastructure Committee by 27 May 2009 on whether a National Environmental Standard (or alternatives, such as codes of practice) will be sufficient to achieve the government's objectives, or whether it will be necessary to amend legislation to cover such matters as:
- 26.1 fibre cable deployment on telephone and electricity poles;
 - 26.2 access to local authority-owned passive infrastructure such as ducts;
 - 26.3 micro-trenching; and
 - 26.4 fibre-optic cable "drops" from the street-side into customer premises;
- 27 **Note** that areas outside the 75% coverage area for the government objective will be addressed separately, which may be associated with a review of the Telecommunications Service Obligations;

Financial

- 28 **Note** that further detail on the fiscal impact of this proposal will be developed during the Budget process;

Consultation

- 29 **Agree** that the Minister for Communications and Information Technology may publicly release a discussion document based on this paper, and this paper itself (excluding commercial-in-confidence sections) for consultation purposes; and
- 30 **Invite** the Minister for Communications and Information Technology to report back to this Cabinet Economic Development And Infrastructure Committee by 27 May 2009 on the outcome of consultations on the proposals in this paper and on implementation details.

Appendix

Status quo vs. FTTH to 75%

Status quo

Given Telecom's Operational Separation Undertakings and its planned ADSL2+/VDSL2 roll-out, it is probable that the following downstream broadband speeds and coverage will be achieved:

Downstream broadband speeds	Estimated population coverage
>50 Mbps (including FTTP)	20%
30 Mbps	40%
20 Mbps	60%
10 Mbps	84%
5 Mbps	89%
<5 Mbps	98.6%
No broadband access	1.4%

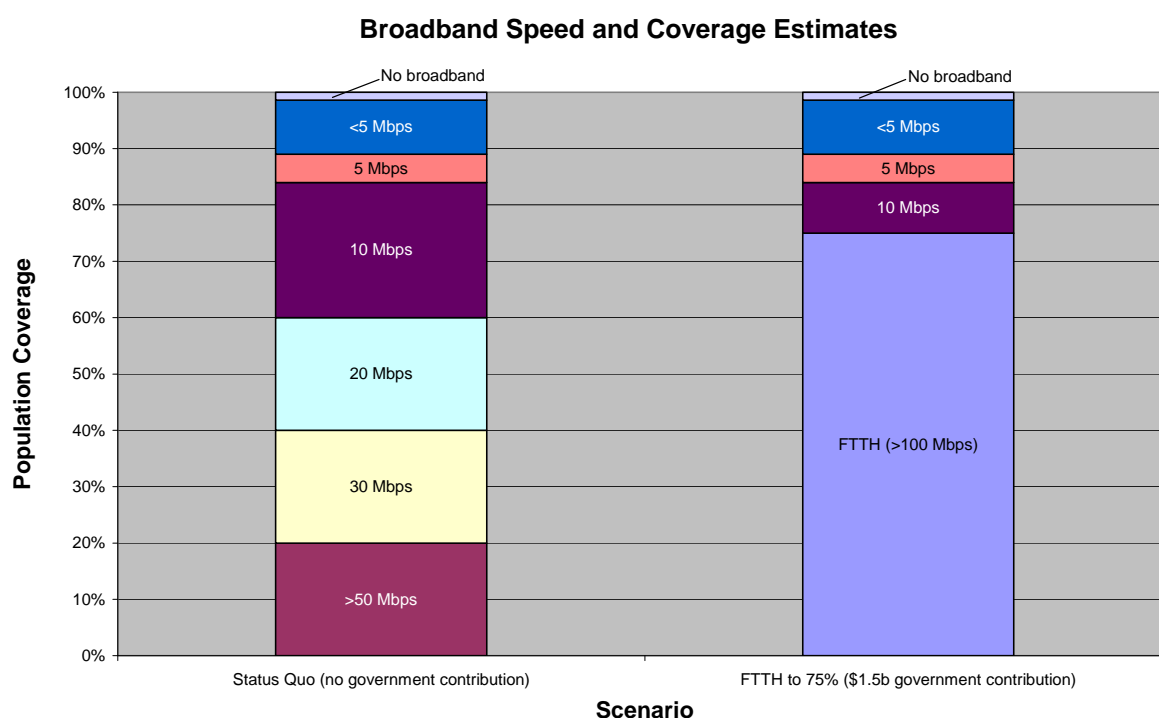
With these speeds available to them, end-users would be able to access a range of services, including video conferencing and IPTV:

User	Likely downstream broadband speed purchased	Key applications enabled by given bandwidth	Estimated monthly cost of broadband service
Major business	Likely to be on FTTP already or >50 Mbps	Transfers of large amounts of data at good speed, multiple applications, multiple users	>\$100
Typical business	20-30 Mbps	Multiple applications, multiple users	\$80-\$100
SMEs	10-20 Mbps	Video conferencing, telemedicine	\$60-\$80
Residential (high users)	10-20 Mbps	IPTV (able to stream up to 3 HD channels simultaneously)	\$60-\$80
Residential (low-medium users)	5-10 Mbps	Streaming video, distance learning, VoIP, teleworking, online radio, real-time applications, gaming	\$50
Residential (rural)	Dial-up to 1Mbps	Internet browsing, email	\$10-\$30

Note that the overall bandwidth required by a particular user would depend on the overall number of services in use at any one time. It is clear that the major downstream bandwidth driver for residential users will be high definition IPTV, if and when it becomes available.

Upgrade: FTTH to 75% of the population

The following diagram compares the estimated broadband downlink speed and coverage outcomes of the status quo scenario (as outlined above) and a fibre-to-the-home (FTTH) scenario (deployed to 75% of the population using a \$1.5 billion government contribution):



It is estimated that roll-out of FTTH to 75% of the population would cost in the order of \$3 to \$6 billion. The government has committed to contributing \$1.5 billion, with the balance to be met by the private sector who will require a return on investment. The size of this return and the expected level of take-up will greatly influence the price consumers will have to pay for FTTH services.

Nevertheless, such an infrastructure upgrade would allow businesses to operate high definition video links and undertake synchronous transfer of large amounts of data for multiple applications and users. This could potentially enable significant business productivity improvements, particularly for ICT-dependent businesses. Additionally, improved access to fibre would be transformational for the health and education sectors, enhancing the quality and flow of information and allowing them to deliver state-of-the-art digital health and education services.

For most residential users, however, the applications available to them with FTTH compared to the status quo are unlikely to be significantly different, at least in the short term. As noted above, the key bandwidth driver for residential users is likely to

be high definition IPTV, which can be achieved using 20-30 Mbps services. For example, under the status quo, 60% of the population would be able to access services capable of delivering three high definition IPTV channels simultaneously. With FTTH, residential users would be able to access 15 high definition IPTV channels simultaneously, the value of which would be determined by individual customers and be reflected in take-up of residential FTTH services.

Another major driver for the use of FTTH services will be the opportunities for home businesses, for example those providing software as a service. In addition, telecommuting, and the potential to break down the distances involved in doing business, will be an important driver.

There is also a strong likelihood of new applications being developed in the future that will require residential users to have fibre broadband connections in order to operate them effectively, particularly as increasing numbers of services are delivered digitally. This is likely to follow the trend seen in the last ten to fifteen years, where applications have evolved on the back of incremental increases in available bandwidth. For example, ten years ago broadband speeds of up to 256 Kbps were required for basic Web 1.0 applications; today we are talking about broadband at speeds up to 20 Mbps and we are seeing the development of Web 2.0 applications; in ten years' time it is likely we'll be talking about ultra-fast broadband at speeds of 100 Mbps and there are very likely to be applications that will demand this bandwidth.

4. Questions and answers

General and process questions

1. Why is the government investing in broadband infrastructure, rather than leaving this to the private sector?

The government is getting involved in order to accelerate the provision of ultra-fast broadband services, with the ultimate goal of creating a step-change in New Zealand's productivity and international competitiveness.

There is little doubt that the future of broadband is in fibre, and that taking it right to the home will bring significant gains for productivity, innovation and global reach. The government believes that we need to use ultra-fast broadband as a way of improving our competitive advantage.

Private sector companies have decided, on behalf of their shareholders and as a commercial decision, not to invest in a nationwide network of fibre-to-the-home at this point in time.

The government understands this, and so wishes to assist and work with the private sector in improving the business case for ultra-fast broadband, by taking the steps outlined in the enclosed proposal. The aim is that this will, in turn, improve the commercial case for increased private investment in broadband infrastructure. The network envisaged in the government's proposal will be available to all companies on an open access basis.

The government is also getting involved in order to encourage the provision of widespread open access dark fibre services, which will facilitate the best possible competition outcomes in emerging markets and encourage innovation in wholesale and retail services.

2. Why has the government presented only one option for comment, instead of alternatives?

The Minister has considered various approaches in the light of the government's pre-election commitments. The Minister considers, on the basis of discussions with a range of parties in various contexts, that the proposal in the Cabinet paper best matches the government's broadband objectives.

The best approach now is to publicise the detailed proposal that the government believes will best achieve its objective. This approach provides a concrete proposal for interested parties to respond to.

3. How open is the government to approaches differing from that set out in this proposal?

The government is open to considering alternative proposals, provided that they are practical, specific and realistic and they deliver on the government's objectives as a whole, including the key principles.

At this stage, the government is less interested in submissions setting out theoretical criticisms without providing a practical alternative approach.

4. Does the government have any preferred partners?

No.

5. Does the government expect that there will be sufficient consumer demand to make fibre-to-the-home commercially viable?

Yes, in the longer term.

6. Does the government expect that there will be sufficient private sector interest in investing in fibre networks at this time?

There have already been a number of companies which have expressed interest in the government's broadband initiative.

Based on our initial contact with the telecommunications industry and the wider investment community, the government believes there is likely to be sufficient interest.

7. Won't residential consumers simply use fibre-to-the-home for entertainment purposes, for example high definition television?

The services provided over the network will be determined by the retailers who use the network as an input into downstream retail services.

The government is confident that the development of an ultra-fast broadband network will provide New Zealanders with the base infrastructure that will support advanced broadband services, including high-speed, real-time Internet connections to the world. Over time, this will facilitate and encourage new enterprise and innovation and spur increased productivity.

It is important to note that the potential uses for new general purpose technology are almost never fully realised at the time of deploying that infrastructure. This is particularly the case for broadband infrastructure, and in the telecommunications industry more generally where the pace of change and innovation is rapid.

There are also network externality effects that should not be ignored. Each additional user on the network is a potential customer for a new application, so the potential for new business models to emerge increases exponentially as more users switch to fibre.

Applications developed on the top of existing internet connectivity have been numerous and many have had very widespread effects, changing the way we communicate and do business. There is no reason to expect this trend not to continue in the future.

Questions on the proposal

8. Why is the government proposal focussed on the provision of access to dark fibre?

The government anticipates that this is the level that the market will not provide at this point, and government investment at that level will facilitate the competitive commercial provision of ultra-fast broadband services over fibre, with the minimum regulatory intervention.

In very simple terms, this is the most “raw” access to the underlying infrastructure, and provides the best competition outcomes because the wholesale customer has full control and flexibility and has the ability to innovate in downstream services.

However, there may be benefits from the dark fibre provider itself also lighting some fibres and providing a managed wholesale “bitstream” type of service, to enable improved economies for its wholesale clients. Certain wholesale services such as these may be provided by Local Fibre Cos with approval from the Crown Fibre Investment Company, where it is clear that they are not being offered as exclusive arrangements designed to favour individual retailers.

9. How does the government see the likely market structure evolving around this fibre network?

The government’s proposed approach will involve the deployment of passive infrastructure and the provision of access to dark fibre. The government will have no direct involvement at any other level of the market. The following is a description of the vertical market structure which is expected to develop around the new network.

It is expected that ISPs, network providers or other service providers will purchase access to dark fibre and install their own active electronics. Local Fibre Cos themselves will have a limited ability to install their own active electronics as well, subject to Crown Fibre Investment Company approval.

In turn, these parties (except the Local Fibre Cos) may use these elements to produce a retail broadband (or other) service, which is sold to end-users. The Local Fibre Cos cannot do this due to their restriction on selling retail services.

These parties may alternatively use these elements to produce a wholesale “bitstream” type of service, which is sold to ISPs or other service providers (Local Fibre Cos can undertake this activity, but as noted above this is subject to Crown Fibre Investment Company approval). The parties that purchase these wholesale services will then use them to provide a retail service.

10. Can a party bid for the whole 75% coverage area in a single bid?

Yes. Proposals covering single regions or any combination of regions, and from single parties or a consortia of parties, will be considered.

Proposals need not be limited to the 75% coverage area nor the specified geographic locations.

11. Why have the specified regions been selected for coverage? Is the government open to a different combination of regions?

The regions for coverage were selected on the basis of the largest cities and towns making up 75% of the population (based on 2006 Statistics New Zealand Census data).

Yes, the government is open to a different combination of regions provided that they are set out in the context of practical, specific proposals and they deliver on the government's objectives. In particular, the combination of all regions must cover 75% of the population.

12. How will the government ensure that the ultimate coverage targets are met, and in particular ensure that the Local Fibre Cos continue network roll-out to homes after the first phase of roll-out to businesses, health and education?

Achieving the government's ultimate coverage target will be a primary task for the Crown Fibre Investment Company. This will be a focus for commercial negotiations. Any contracts entered into will also include key performance indicators, and will ensure that payment by the Crown Fibre Investment Company is tied to delivery of agreed outcomes. The Crown Fibre Investment Company will also retain flexibility to change partners following the completion of any particular phase of roll-out.

13. Is the Crown Fibre Investment Co going to require proposals that provide for deployment of fibre to the entire coverage area?

Not necessarily. Proposals can be staged over time. Initial proposals will be required to deploy fibre to priority broadband users such as businesses, schools and health services. These, plus green field developments and certain tranches of residential areas, will be the focus for the first six years.

14. Will Telecom be required to phase-out its copper access network as the fibre network is deployed?

No. Telecom's network is its private property.

15. What is meant by the term 'partners' in the Cabinet paper?

The term 'partners' refers to any person or group of persons who enter into a shareholders agreement with the Crown Fibre Investment Company in relation to a given Local Fibre Co.

The term does not denote any sort of legal partnership. In fact, the arrangements between 'partners' and the Crown Fibre Investment Company will likely be more akin to joint ventures.

16. How will this proposal accommodate existing companies?

Local Fibre Cos could be created as new companies or alternatively they could be based on existing companies. For example, in some cases, there may be an existing company which could be a suitable vehicle for fibre deployment. In these cases, the Crown Fibre Investment Company and the relevant private sector investor may agree to use that existing company instead of creating a new Local Fibre Co.

17. How is the government going to ensure that the new network does not unnecessarily duplicate existing fibre networks?

A key criterion for the selection of successful proposals will be the provision of additional fibre coverage in the relevant region, including providing open access where this is not currently available.

The government recognises that, in some cases, access to existing dark fibre may not be forthcoming on commercial terms, and so a degree of duplication may be necessary, however the initiative has been designed to avoid this to the greatest extent possible. Duplication will also only be considered where there are competition or contestability benefits (for example by way of increased facilities-based competition).

18. What measures are in place to ensure that the Local Fibre Cos will not engage in monopoly pricing or anti-competitive conduct?

There are a number of structural mechanisms in place to avoid this outcome. The Local Fibre Cos will not have any direct interest in retail operations, and there is a limitation on the voting power of partner shareholders that own or operate retail operations. The aim is to ensure the Local Fibre Cos have structural incentives to maximise usage of the network, and no other competing incentives.

The Crown Fibre Investment Company will also own shares and have voting rights in the Local Fibre Cos, and so will have some control over Local Fibre Co behaviour in this way. The Local Fibre Cos' dark fibre services will face direct competition in some areas, and downstream competition from Telecom's copper network.

Finally, services provided by Local Fibre Cos could become subject to an investigation by the Commerce Commission under either the Telecommunications Act 2001 or the Commerce Act 1986.

19. Why is the government proposing to enter into joint venture shareholding arrangements, rather than providing grants and contracting for delivery?

The government considers that this approach will best deliver on its objectives. This approach also enables the taxpayer to share in any significant commercial gains over the long-run.

20. What rate of return does the government expect?

The government is interested to hear from stakeholders on their expectations in this regard.

The government has an open mind on this matter. The rate of return will be decided by the CFIC within an overall framework set by the government. The government is prepared to consider receiving a lower rate than the commercial partner for an initial period.

21. Will the government allow different rates of return in different regions, and/or in different roll-out phases?

Yes, taking into account the commercial factors that apply in each case. These matters will be subject to negotiation with the Crown Fibre Investment Company, again within an overall framework set by the government.

22. Is a regional approach consistent with a nationwide network, or will it result in a 'patchwork' with differing standards and arrangements?

The regional approach described in this proposal is expected to lead to a nationally cohesive network. All regional networks will provide open access to dark fibre. The same technical standards will apply across the regional networks, and the network will include neutral points of presence with common interconnection standards and requirements. The Crown Fibre Investment Company will have a role in ensuring nationwide consistency.

Complementary measures

23. What else is the government doing to facilitate and encourage the deployment and uptake of fibre-to-the-home?

The government will be undertaking a number of complementary initiatives to facilitate and encourage the deployment and uptake of fibre-to-the-home.

The government recognises that initiatives on the demand-side will be necessary to support the main supply-side initiative. In order to stimulate take-up of services offered over the new fibre network, the government will continue to encourage the readiness of all public sector agencies, and in particular the health and education sectors, to take full advantage of fibre network services.

In addition, the government will assess how best to facilitate access to and use of fibre cable deployment on telephone and electricity poles, local authority-owned passive infrastructure such as ducts, micro-trenching and fibre-optic cable "drops" from the street-side into customer premises. This may involve codes of practice or regulatory or legislative amendments. Relevant legislation includes the Resource Management Act, the Telecommunications Act, the Electricity Act and the Local Government Act. This will be a significant complementary work stream running alongside the main initiative.

Finally, the government will also be looking closely at the expansion of the ICT workforce, and developing digital literacy among adult New Zealanders.

24. What is the government doing to assist rural end-users?

The government made a pre-election commitment to provide \$48 million to improve rural broadband. The Minister for Communications and Information Technology is currently developing options around this commitment and expects to make announcements regarding the direction of the government's rural telecommunications policy in the near future.