Annex 1:

Case Studies

TABLE OF CONTENTS

AUSTRALIA: HEAVY VEHICLE ROAD REFORM CASE STUDY

Introduction

Australia's expansive road network is one of its most valuable assets, and a substantial contributor to the economy. At last count, in 2015, the road network was over 870,000km in length,[1] with an estimated value of around AUD 470 billion.[2] Construction continues apace too, with AUD 26.2 billion being spent in 2015–2016 on new roads and maintenance.

The estimated unit costs per lane kilometer of road type are illustrative of some of the costs of road construction in Australia. These costs are averaged but provide an insight into general costs of building new roads: AUD 15,000 for gravel roads to AUD 600,000 for metropolitan paved divided roadways, and from AUD 7 million for metropolitan freeways to AUD 120 million for metropolitan tunnels.[3]

Despite its size, demands on the road network are increasing. This increased demand can be attributed to three main factors:

- Population growth;
- Individuals' preference for private road travel over other options; and
- The preference of industry to transport freight using roads.

This last factor is critical – freight on road is increasing substantially in Australia. In 1994–1995, 101.4 billion ton kilometers (BTK) of freight was transported over Australian roads, while in 2015–2016, the figure was 212 BTK.

Under the Australian Constitution, the federal government has no responsibility for road construction or maintenance. Rather, ownership and control of the road network in Australia lies with state, territory (i.e., provincial governments) and local governments. States and territories tend to own and manage main highways and arterial roads, with local governments owning and managing smaller, local roads. A small proportion of the road network is privately held by toll road operators. Importantly, road expenditure in Australia is financed by federal, as well as state, territory, and local governments. The majority of road related revenue is collected by the federal government (through fuel excise) and distributed to states and territories through annual budget processes.

Governments in Australia – at all levels – are under significant pressure to deliver an appropriate level of service to road users and industries that are dependent on roads. To meet demand, total government road expenditure has been increasing at an average annual growth

[1] Bureau of Infrastructure, Transport and Regional Economics (BITRE), *Yearbook 2017: Australian Infrastructure Statistics* (2017), https://bitre.gov.au/publications/2017/yearbook_2017.aspx
[2] In 2015 dollars; S. Alchin, *Establishing a regulated asset base and applying a corporatised delivery model to the Australian road network – opportunities and challenges*, ITF Discussion Paper, 2018
[3] Ibid.

rate of 6 per cent per year, and expenditure requirements are expected to increase further given the forecast growth in population, freight movement and vehicle use.[4]

At the same time that road use and spending on roads is increasing, the revenue base for funding roads is being eroded. Across all vehicles (heavies and lights), fuel excise receipts decreased from AUD 13.67 billion in 1999–2000 to AUD 11.03 billion in 2014–2015 in real terms. Revenue from vehicle registration has only increased incrementally over this same period.

If revenue continues to decline, as expected, governments will struggle to fund new roads and maintain existing ones. This will put a significant brake on productivity and growth.

Pre-reform situation

Heavy vehicle operators currently pay charges (fuel excise and registration fees) designed to recover the cost of their road use. Known as "pay as you go" (PAYGO), this basic system has been in place since 1992. But flaws with this system are becoming apparent.

For heavy vehicles, the National Transport Commission (NTC) estimates average road user charges that aim to recover past road expenditure that is attributable to heavy vehicle use. Basing future charges on past expenditure does not guarantee that future costs, including maintenance, are fully funded. Further, the NTC only has the power to recommend a price. Recently governments have decided not to adopt the NTC's recommendations.

Additionally, under PAYGO there is no real way to link the service road users might want (e.g., a bridge strong enough to carry high productivity vehicles) with the road charges paid. In a broader sense, funding arrangements give road managers little long-term revenue certainty to plan for efficient investment in infrastructure. Instead, the current funding system tends to favor short-term thinking (e.g., potentially spending available funds on quick fixes rather than a rigorous schedule of maintenance that might optimize asset value).

Fuel use and annual registration charges are poor proxies for actual road use. The amount users pay for fuel and registration do not directly reflect the actual use of specific roads and the damage caused by heavy vehicles. Moving to a charging system where users pay more directly and fairly for their consumption of road services is an opportunity to move to a more sustainable basis for funding road infrastructure. This would better match how charges are applied in other infrastructure sectors. It would also allow road managers to better manage demand for roads and thereby deliver more sustainable transport outcomes.

Policy response

Heavy vehicle road reform (HVRR) is a long-term microeconomic reform that aims to improve the efficiency and sustainability of funding arrangements for road infrastructure. The reform aims to achieve this by better linking heavy vehicle road use with the charges paid by heavy vehicle operators, aligning charges with investment in the road network to support heavy

[4] Total government road related expenditure increased from AUD 15.2 billion in 2005–2006 to AUD 24.8 billion in 2013-2014 (adjusted CPI, constant 2013-14 prices). This represents an average annual growth rate of 6.4 per cent per year. Source: BITRE; NTC.

vehicle services. The principles underpinning HVRR have worked in similar infrastructure sectors such as telecommunications, water and energy.

HVRR has been underway since late 2015. There are four phases to the reform which allows governments to take a deliberative, incremental approach. HVRR is following a reform road map which has been agreed upon by federal, state and territory governments through the Transport and Infrastructure Council (a council made up of transport and infrastructure ministers at the federal, state and territory level). It provides a flexible, pragmatic, phased approach to longer-term reform, drawing on past experiences and challenges faced (see Figure 1, below).

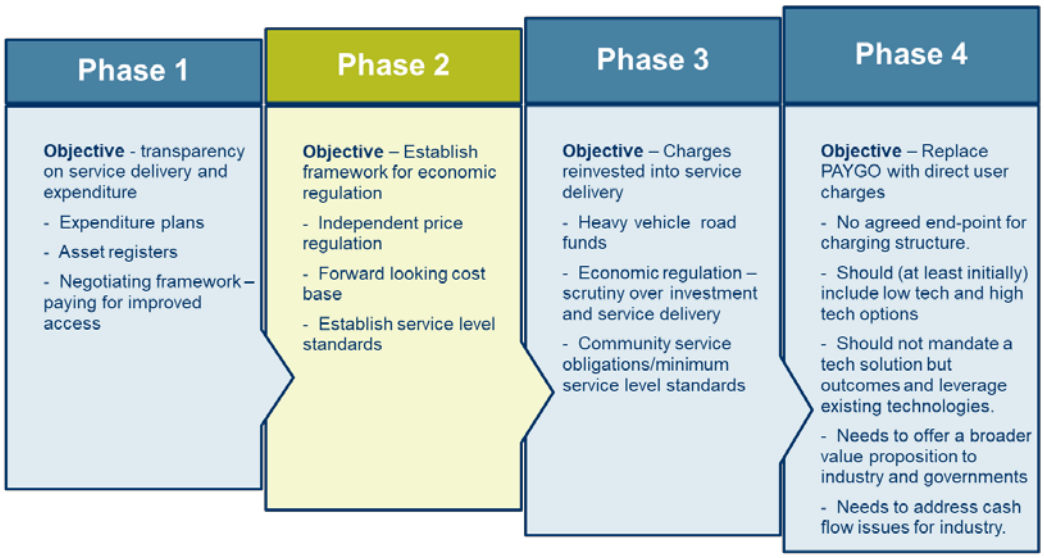


Figure 1: HVRR 4 Phases Roadmap: This is a summary of the HVRR roadmap endorsed by the Transport and Infrastructure Council in May 2015, noting that it contains a number of policy decisions that remain subject to the agreement of federal and provincial governments.

Phase 1 of HVRR is largely complete, but subject to ongoing improvement and refinement. The TIC website now includes detailed asset registers (showing heavy vehicle ratings for all key freight routes in Australia) and expenditure plans (showing state and territory planned investment on those same routes).[5]

In 2018–2019, governments are working toward the introduction of two Phase 2 governance measures – independent price regulation of heavy vehicle charges, and a forward-looking cost base. These two measures will provide the basis for a charging system which is more efficient, financially sustainable and fair. Independent price regulation of heavy vehicle charges will enable a regulator to determine charges at arm's length from governments. A forward-looking cost base would enable governments to charge heavy vehicle road users on the basis of a fair return on an expenditure base that includes the forecast cost of building, maintaining and upgrading road infrastructure to at least a minimum standard.

[5] Transport and Infrastructure Council, Australia. (2017). Heavy Vehicle Road Reform. Retrieved from http://transportinfrastructurecouncil.gov.au/publications/heavy_vehicle_road_reform.aspx

Consideration of other issues is beginning to take place – such as around community service obligations (CSOs) and how funding might be returned to road managers at the state and local levels. An early analysis of CSOs has commenced across government through work such as the recent Austroads report, 'Community Service Obligations Framework for the Roads Sector'.[6] Consideration is also being given to heavy vehicle road funds, as a mechanism to better link heavy vehicle charges to investments in heavy vehicle infrastructure.

Impact

The ultimate goal of HVRR is being guided by a number of principles:

- Accountability – Funding and investment decisions should be accountable to road users and end-users
- Transparency – Road users should be able to see how their charges are set and spent
- Fairness – Road users should pay in proportion to their use of road assets
- Efficiency – Funding should be directed to investments that deliver the greatest benefit in the most efficient way

These objectives, together, aim to develop a system which results in improved freight productivity outcomes for heavy vehicle operators. More cost-reflective charging will enable governments to improve access for high productivity vehicles and oversize loads across the road network by more directly linking heavy vehicle charges to the impact those vehicles have on the roads – and the funding to manage those roads. Getting goods more efficiently into and out of freight hubs, for example, will improve the profitability of the industries reliant on them and the economic welfare of surrounding areas.

Productivity benefits accrue through improved access because it can reduce decoupling and unloading by allowing the use of higher productivity vehicles across a wider range of roads, resulting in a more efficient mix of heavy vehicles being used. Currently, if road providers (particularly local governments) provide access to larger heavy vehicles, it is unlikely they will receive the funding flows or economic benefits to support this access.

Funding certainty and a forward-looking approach to asset and cost management would encourage road managers to prioritize optimized road maintenance. For road users, this would mean better quality roads on average over longer periods.

These productivity improvements should ultimately result in reduced costs for consumers as heavy vehicle operators will be able to take advantage of economies of scale through transporting larger loads, improvements to access, and reduced vehicle operating costs.

Challenges and lessons

HVRR is economy-wide reform being worked on together by the federal government and by states and territories. The federal government does not own or manage any of the road network and has limited powers over state and territory, and local government road management. This means that the reform process needs to be coordinated across a large number of government stakeholders, many with competing views and interests. Additionally, some of the reforms

[6] Available at: https://www.onlinepublications.austroads.com.au/items/AP-R545-17

being proposed, such as independent price regulation and a forward-looking cost base, involve significant complexity.

Designing a new system, which is predicated on support from a broad stakeholder group – including different industries and advocacy bodies – has involved being highly consultative and clear in approach. While industry is broadly supportive of the reforms, governments have had to manage industry expectations as to the pace at which reform can take place.

CANADA: ACCESS TO DIGITAL INFRASTRUCTURE IN CANADA

Introduction

Inclusive prosperity in the modern economy rests on the ability of every citizen to meaningfully participate. Canada is one of the largest economies in the world in terms of area at nearly 9 million square kilometers and has a population of approximately 35 million.

The government of Canada's overall telecommunications policy approach has been to establish marketplace frameworks to foster competition and investment, effectively manage the spectrum to encourage the availability of wireless services, and establish targeted funding programs for rural broadband expansion for areas that lack a private sector business case.

The private sector has long been the primary source of telecommunications investment in Canada. On average, the private sector invests in the order of CAD 10 billion per year. The majority of the population has access to competing fixed line broadband infrastructures based on regional telephone and cable companies that have upgraded their networks to provide broadband services. In rural and remote areas, a wireline broadband option can be much more challenging economically to build and maintain. Terrestrial wireless infrastructures are more common along with satellite-based broadband services.

In terms of market structure, regional cable carriers collectively have 49 per cent of the residential Internet access market and incumbent telephone carriers have 39 per cent of the market in total. The remaining 12 per cent is composed of a large number of other carriers. They include wholesale-based providers that largely operate in urban areas using wholesale access to incumbent infrastructures to provide their own retail services. They also include a range of rural-oriented providers that focus on providing service in rural areas and/or to specific local communities. They are more likely to include wireless technologies.

Pre-reform situation

Canada's rural and remote regions face particular challenges in accessing broadband networks. Low population density and challenging terrain mean that it can be difficult for the private sector to generate adequate returns and invest in new or upgraded broadband networks. Rural and remote areas lag behind urban areas in terms of broadband coverage, with the gap widening at faster speeds. In addition, certain northern remote communities are satellite dependent, and have the greatest needs. As such, successive Canadian governments have established targeted programming to ensure inclusive access.

Policy response

Early programs focused on ensuring a basic level of service in the order of 1.5 megabits per second (Mbps) to all Canadians. One of the first significant broadband programs was launched by the Government of Canada in 2002. The three year, CAD 105 million, Broadband for Rural and Northern Development Pilot Program (BRAND) provided funding for high-speed internet services in communities that would not otherwise have been connected by market forces alone. The two pillars of the BRAND program: providing financial support to develop sustainable

business plans; and capital funding to implement those plans, would serve as the model for future support programs aimed at providing internet access to communities that struggle to independently attract private investment. This ground-based infrastructure program was complemented by a National Satellite Initiative (NSI) to establish broadband capacity in high-cost remote and First Nations communities in the mid-to-far North. This initiative was executed collaboratively between three key government sponsors: Infrastructure Canada, Industry Canada (now Innovation, Science and Economic Development Canada), and the Canadian Space Agency.

Building on the success of BRAND and NSI, the Government of Canada launched the Broadband Canada Program (BCP) in July 2009 to further reduce the number of rural and northern communities that lacked high-speed broadband. The CAD 225 million BCP was mandated to finance projects that extended broadband coverage to unserved and underserved households. The program would achieve this objective by providing up to 50 per cent of project costs (up to 100 per cent for indigenous communities when combined with other federal support programs) while aiming to leverage funding from the private sector and other levels of government.

These programs complemented existing private sector investments and programs by provincial and territorial governments.

More recently, the focus has been on providing access to faster speeds in light of technological change and demand growth. Connecting Canadians, a CAD 305 million program launched in 2014, was aimed at extending and enhancing broadband networks at a target speed of at least 5 Mbps. The program included assessment criteria that considered scalability among other criteria and funded projects at faster speeds (e.g., 25 Mbps). In recognition of the unique geographic circumstances of far northern communities, it included a dedicated northern component to extend and augment capacity in northern communities in Nunavut and the Nunavik region of Quebec.

In December 2016, the Government of Canada launched the CAD 500 million Connect to Innovate program. Connect to Innovate is focused on expanding high-capacity backhaul to underserved rural and remote communities and also connecting anchor institutions such as schools, hospitals, and indigenous government buildings. More broadly, access to community backhaul will support fixed and mobile services to local homes and businesses at faster speeds. The goal is to provide a transformative level of service to rural and remote communities that can both support current needs and scale for long-term growth.

The Connect to Innovate program has been highly successful. The program received close to 900 applications, requesting over CAD 4.4 billion in funding. To date, the government of Canada has announced funding for 139 projects in seven provinces and territories across the economy. These projects will improve connectivity in 740 rural and remote communities – more than double the 300 initially targeted. The government of Canada expects to make additional funding announcement with project partners over the coming months.

In December 2016, the Canadian Radio-television and Telecommunications Commission (CRTC) completed a comprehensive review of its basic telecommunications framework (referred to as universal service frameworks in some economies), which stipulates which

telecommunications services Canadians should have access to in order to participate meaningfully in the digital economy, and the commission's role in ensuring access to them.

In this decision, the commission established broadband as a basic service, noting that broadband access had increased in importance to Canadians. The CRTC also set a speed target of 50 Mbps download and 10 Mbps upload across the economy, and access to the latest mobile wireless technologies where Canadians live and along major roads. In order to help meet these objectives, the CRTC created a new fund with up to CAD 750 million to invest over five years. The CRTC has been consulting on the implementation criteria with a decision expected in 2018.

Impact

Essentially universal coverage of at least low speeds was reached by 2012. The next highest tier of 5 Mbps is also reaching essentially universal access. Access to 25 Mbps reached 91 per cent of the population in 2016 using a mix of wired and wireless technologies. The 50 Mbps standard is expected to reach 90 per cent of the population by 2020 up from 84 per cent as of 2016.

There has been strong growth in faster speeds as well, with 100 Mbps available to 83 per cent of households in 2016, up from 35 per cent in 2012. Growth of speeds at 1 gigabit per second (Gbps) is following the same trajectory and is expected to reach 80 per cent of the population by 2020.

Lessons learned

In designing its rural broadband funding initiatives, the government of Canada has been guided by certain policy principles to help maximize the impact on Canadians and ensure that projects are focused on areas that would not otherwise be served by market forces due to lack of a business case. These principles include:

- Undertaking robust and extensive broadband data collection and mapping activities to inform policy and program development, and to help identify underserved areas, so that funding is focused on areas that lack access and that are of greatest need.
- Using open competitive application processes to maximize value for money and promote sound and competitive projects.
- Coordinating and collaborating with key stakeholders and project partners, including the private sector, provinces and territories, not-for-profit organizations, and indigenous communities, to share broadband coverage information, leverage local expertise, align objectives, and maximize leveraging opportunities. In recognition of the complexity of executing these projects, more time has been allocated upfront for consultation and planning.
- Promoting technological neutrality by ensuring that programs allow for a variety of potential technologies to be used (e.g., wireline, wireless and satellite), provided that they meet the established program criteria (e.g., speeds, quality of service, scalability, etc.)
- Covering only the uneconomic portion of infrastructure costs and establishing program contribution limits that encourage build-out in challenging areas, while

balancing interest in having applicants invest their own funds. In particular, past programs have recognized the unique circumstances of very remote, satellite-dependent, and indigenous communities and have had higher contribution limits in these areas. Contribution limits have evolved over time to better account for particular needs and local circumstances.

CANADA: INVESTING IN SOCIAL INFRASTRUCTURE

Introduction

In Canada, infrastructure is largely developed, owned and managed by provincial, territorial and municipal governments. This includes highways, roads, bridges and other transportation infrastructure; water and waste-water facilities; education and health infrastructure; and social infrastructure, including housing, early learning and child care, and community centers. A number of other active players contribute to infrastructure investment, operations and regulations in Canada, including the private sector, semi-private entities like Crown corporations as well as non-profit associations.

In recent years, all orders of government in Canada have increased their investments in infrastructure. Provinces, territories and municipalities, which own the vast majority of core public infrastructure, collectively doubled their investments between 2003 and 2013, from CAD 14.5 billion to CAD 29.5 billion. The federal government also increased its spending on core public infrastructure, from CAD 600 million annually in 2003–2004 to CAD 5.5 billion annually by 2014–2015.

Despite increased investments, infrastructure demand has outpaced investments for several decades. Examples of the gap include congestion in urban centers, too many Canadians struggling to meet their housing needs, insufficient and aging water and wastewater systems, lack of broadband Internet connectivity in many rural and remote areas, and a lack of basic infrastructure in many indigenous communities. While the size of Canada's infrastructure gap is a matter for debate, there is consensus that significant investments are needed to address it. The additional CAD 95 billion in federal support announced in Budgets 2016 and 2017, including more than CAD 8.6 billion for indigenous communities, along with significant investments in infrastructure by other orders of government, will help to close the gap while also supporting longer-term investments to address emerging challenges and opportunities.

Pre-reform situation

The government of Canada recognizes that infrastructure is essential to the delivery of the services required to build inclusive communities where all people can participate and contribute to society. The Minister of Infrastructure and Communities' 2015 mandate letter reflects the need to address Canada's broad-based infrastructure gap. Extensive research, public engagement and the advice of the Advisory Council on Economic Growth make it clear that Canada needs a long-term approach to investing in infrastructure to improve the quality, accessibility and sustainability of services that Canadians use every day.

The Investing in Canada Plan is built upon extensive research and public engagement that made it clear Canada faces a broad-based infrastructure gap which is limiting Canada's economic growth and Canadians' quality of life. With historic investments in social infrastructure, public transit, green infrastructure, trade and transportation infrastructure, and rural and northern communities (see Annex A), new federal investments will take advantage of historically low interest rates to renew Canada's infrastructure and improve the quality of life for all Canadians.

Understanding the Social Infrastructure Gap

Early Learning and Child Care

Over the last three decades, the need for child care has grown steadily, with the rise in employment rates among women and the corresponding increase in dual-income earner families. Beyond need, the demand for quality child care has also increased, due to the potential benefits on peer socialization, school readiness, and numeracy and language skills. Only one in four children in Canada have access to regulated early learning and child care. Affordability also remains a concern for many families. The lack of affordable, quality child care can limit the ability of parents to participate in the labor market.

The government of Canada supports child care through direct support and tax measures for families and through a notional allocation of the Canada Social Transfer (CST) to provinces and territories. These funds are transferred on an equal per capita basis. Provincial and territorial governments have the responsibility to design and deliver programs and are accountable to their citizens and legislatures for outcomes achieved and dollars spent.

Housing and homelessness

Across Canada, homelessness affects a diverse cross-section of the population and the communities in which they reside. In 2014, an average of 13,857 Canadians slept in an emergency shelter on any given night, accounting for over 90 per cent of Canada's 15,000 shelter beds. Indigenous peoples are particularly overrepresented in emergency shelters, representing approximately 30 per cent of all shelter use in 2014. Additionally, in 2016 over 1.7 million Canadian households (12.7 per cent) were in core housing need, meaning that their housing was either in poor condition, crowded or unaffordable, and the family was unable to access acceptable alternative housing in their community. Indigenous people are disproportionately affected by poor housing.

The government of Canada, through the Canada Mortgage and Housing Corporation, works with its provincial and territorial partners to reduce the number of Canadians in need by improving access to affordable housing. Since 2011, new federal funding for affordable housing has been provided through the Investment in Affordable Housing initiative, which is cost matched by provinces and territories.

Community, Culture and Recreational Infrastructure

Canada's culture and recreational infrastructure is in critical need of repair and refurbishment. The Canada Infrastructure Report Card determined that sport and recreation facilities in the public realm are in the poorest condition of all asset categories surveyed, with 19 per cent of sport and recreation infrastructure rated in poor or very poor condition, which negatively impacts the functioning of the facilities. The estimated replacement cost of facilities in poor and very poor condition is CAD 9 billion.

Policy Response

The Investing in Canada plan is the Government of Canada's comprehensive, long-term plan for building a prosperous and inclusive economy through historic infrastructure investments.

The plan will contribute to building communities where all Canadians have the opportunity to succeed in the economy and society. The plan is built upon extensive research and public engagement that made it clear Canada faces a broad-based infrastructure gap which is limiting economic growth and Canadians' quality of life. The Investing in Canada plan differs from previous infrastructure plans—it is longer term and guided by clear priorities, concrete objectives and, instead of outputs, by measurable outcomes. It offers long-term, sustained funding to enable planning and prioritization by all orders of government.

Over the 12 years of the plan, starting in 2016, the government will invest over CAD 180 billion in infrastructure—more than doubling existing federal funding—to achieve three objectives:

- Generate long-term economic growth
- Improve the resilience of communities and transition to a clean growth economy
- Improve social inclusion and socioeconomic outcomes for all Canadians

Provinces, territories, municipalities and indigenous communities are key partners in developing and implementing the plan. Through the plan, the federal government's increased investment in infrastructure will be further leveraged by all orders of government to more than double the reach of the plan's funding.

A two-phased approach

Through extensive consultations with provincial, territorial, municipal and indigenous partners, as well as various domestic and regional stakeholders, it was clear that some investments had to be made quickly, but that the government also needed to effectively plan for the long term. Before making massive investments in major, transformative projects, the government needed to restore, modernize and adapt Canada's current stock of aging infrastructure. To address both long-term and short-term needs, a two-phased approach was developed.

The first phase of the plan, outlined in Budget 2016, accelerated existing programs and launched short-term programs focused on rehabilitation, repair and modernization. The next phase, outlined in Budget 2017, consists of long-term investments to address broader and more ambitious goals, such as a more inclusive society.

- ***Phase 1***

As part of the government's Phase 1 commitments, Budget 2016 proposed initial social infrastructure investments totaling CAD 3.4 billion over five years. These investments are helping to expand affordable housing (including shelters for victims of violence), support early learning and child care, renew cultural and recreational infrastructure (such as community centers, museums, parks and arenas), and improve community healthcare facilities on reserve. Of this new funding, CAD 1.2 billion is being invested in First Nations, Inuit and northern communities, which is a key pillar of the government's strategy to create growth that benefits everyone.

- ***Phase 2***

The next phase of the plan sees Canada invest in big projects that will help build Canada's economy for the future and help achieve the overall vision the government has for Canadian

communities, including better access to affordable housing and more affordable child care spaces. By investing in the things that help make neighborhoods better places to live the government is building stronger neighborhoods and a better quality of life for the future. Budget 2017 provides new investments of CAD 21.9 billion over 11 years to support social infrastructure in Canadian communities.

Social infrastructure: A CAD 25.3 billion investment

- ***Early Learning and Child Care***

To help Canadian children get the best start in life and to better support families, Budget 2016 and 2017 announced investments totaling CAD 7.5 billion over 11 years, starting in 2017–2018, to support and create more high-quality, affordable child care across the economy, particularly for families more in need, including indigenous families and children living on and off reserve.

On 12 June 2017, the government of Canada announced a historic agreement with provincial and territorial governments on a Multilateral Early Learning and Child Care Framework. The framework will be seeking to increase the quality, accessibility, affordability, flexibility and inclusivity in early learning and child care, in particular for families that need child care the most. To implement the framework, the federal government has been working with each province and territory to enter into initial three-year bilateral agreements. These bilateral agreements, representing a total value of CAD 1.2 billion, are publicly available once concluded and accompanied by an action plan detailing how each province and territory will support and report on the unique early learning and child care needs of their jurisdiction. This investment will increase the number of affordable child care spaces for low- and modest-income families by supporting up to 40,000 new subsidized child care spaces over the first three years of funding. The government is also working in partnership with indigenous peoples to co-develop the Indigenous Early Learning and Child Care Framework to better support the distinct needs of indigenous children and families.

- ***National Housing Strategy***

Through the National Housing Strategy—of which CAD 16.1 billion in direct funding over 11 years is led by the Canada Mortgage and Housing Corporation[7]—the government is reengaging in affordable housing by investing in the growth of livable communities and the resilience of the community housing sector. The strategy was developed in collaboration with the provinces and territories, and in consultation with municipalities, indigenous peoples, industry experts, stakeholders and Canadians living with the challenge of finding adequate and affordable housing.

Key elements of the National Housing Strategy include:

[7] The portion of National Housing Strategy funding allocated under the Investing in Canada plan, total also includes internal funding sources from the Canada Mortgage and Housing Corporation and funding of CAD 2.1 billion for homelessness programming led by Employment and Social Development Canada as per Annex A.

- A renewed partnership between the government and provinces and territories (CAD 7.7 billion) to address distinct housing priorities, including affordability, repair and construction.
- A National Housing Co-Investment Fund (CAD 5.1 billion) to ensure existing rental housing is not lost to disrepair and to develop new, high-performing affordable housing integrated with supports and services.
- An expanded federal homelessness program (CAD 2.1 billion) to reduce homelessness.

- ***Community, culture and recreational infrastructure***

Canada's cultural industries reflect the Canadian experience and showcase Canadians' creativity and diversity. To help promote arts and culture in Canada, Budget 2016 invested CAD 1.9 billion over five years to support key domestic cultural institutions. Investments also supported recreational infrastructure and community accessibility across the economy.

Budget 2017 builds on this commitment, with a further investment of CAD 1.8 billion over 10 years starting in 2018–2019, focused on the following initiatives:

- The Community, Culture and Recreational stream of the Investing in Canada Infrastructure Program (CAD 1.3 billion over 10 years) is to provide funding for the construction, expansion or rehabilitation of new community, culture, sports and recreation facilities.
- The Canada Cultural Spaces Fund (CAD 300 million over 10 years) is to support the improvement of physical conditions for artistic creativity and innovation.

- Community Educational Infrastructure (CAD 80 million over 10 years) is to help build or modernize community educational infrastructure in official-language minority communities.
- The Enabling Accessibility Fund (CAD 77 million over 10 years) is to fund eligible capital projects that increase access for people with disabilities to community spaces and workplaces across Canada.

Delivering the plan

The government of Canada's Investing in Canada plan will be delivered by Infrastructure Canada, along with other federal departments and agencies such as the Canada Mortgage and Housing Corporation and Employment and Social Development Canada. The Minister of Infrastructure and Communities is responsible for coordinating the plan and ensuring that the outcomes of infrastructure investments are reported to Canadians.

Impact

Infrastructure investments are an optimal means for addressing inequalities. The focus on outcomes will be key. To allow Canadians to see exactly the difference infrastructure investments are making in their communities and lives, the Government will track and report regularly on the following outcomes:

1. Rate of economic growth is increased in an inclusive and sustainable way.
2. Environmental quality is improved, GHG emissions are reduced and resilience of communities is increased.
3. Improve urban mobility in Canadian communities.
4. Housing is affordable and in good condition and homelessness is reduced year over year.
5. Early learning and child care are of high quality, affordable, flexible and inclusive.
6. Canadian communities are more inclusive and accessible.
7. Infrastructure is managed in a more sustainable way.

The government measures progress on these indicators against existing data sources where available, and by developing new data sources. Example indicators have been developed for each outcome; these indicators will be refined as enhanced data becomes available. Results will be reported to the public through Canada.ca/results and the website of Infrastructure Canada.

Challenges and lessons

Key challenges of the Investing in Canada plan include the lack of precise data on the state and performance of existing assets, a lack of innovation in infrastructure development, and the need to find new ways to better use public funds and access private capital.

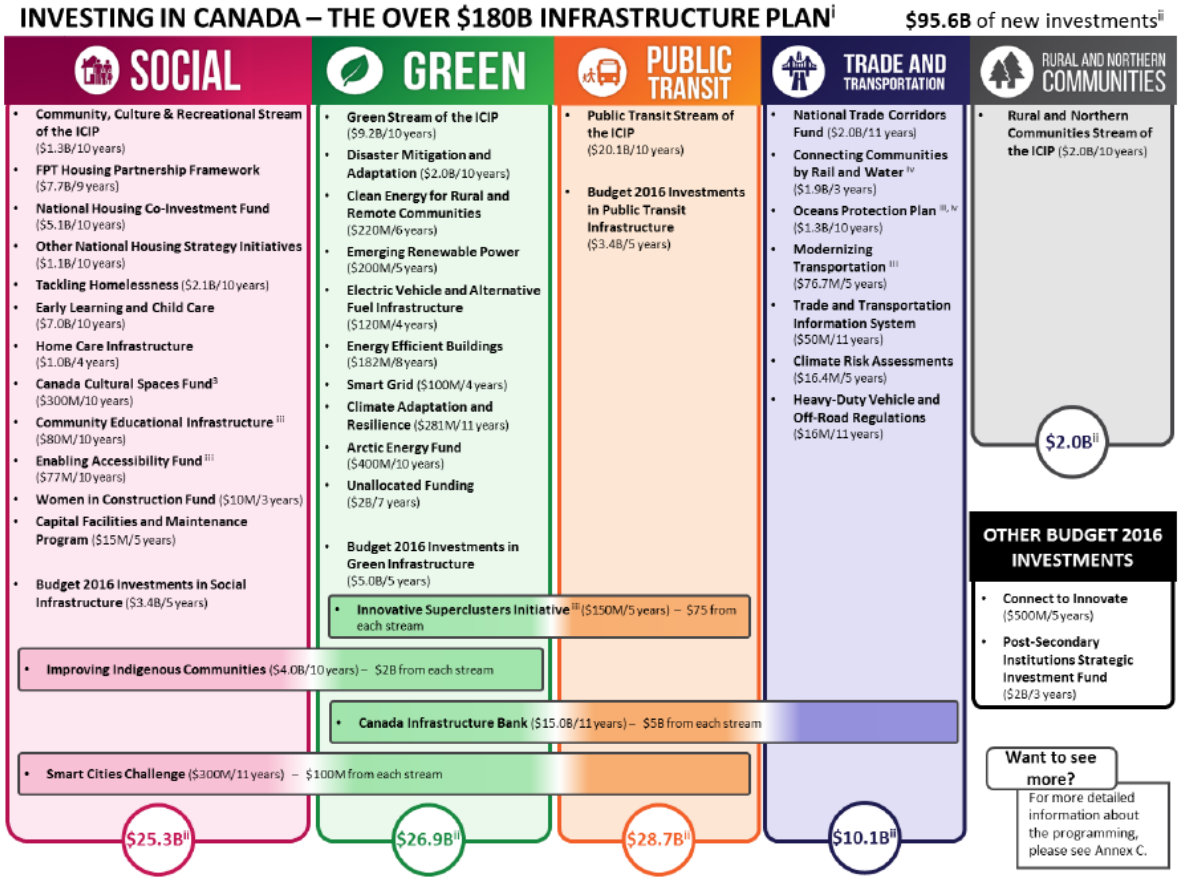
The Investing in Canada plan will introduce new ways to measure the impact of infrastructure investments – a process that begins with improving data collection. For example, the Canada Mortgage and Housing Corporation is improving data on housing through improved data

collection and analytics on housing and household conditions through new economy-wide surveys, leveraging existing surveys, and expanding the collection of program data. Employment and Social Development Canada is improving data, including by leveraging existing administrative data to support early learning child care data collection and analysis and to develop a new methodology to measure shelter use patterns and trends among the homeless population.

The Investing in Canada plan is an ambitious long-term blueprint for investing in and building the infrastructure that Canada needs for today and for generations to come. The plan is focused on addressing infrastructure challenges across Canada and reflects the priorities of Canadians. It is a plan that seeks to benefit all Canadians. As with all long-term plans and major investments, the results will unfold over time. To ensure that the Investing in Canada plan is a success, the government is working closely with other orders of government to deliver on its commitments.

Annex A

Overview of Investing in Canada Plan Commitments



For details on the Investing in Canada table, please refer to page 7 of the Investing in Canada Plan: 2018 Report at the link below.

For more information on the Investing in Canada plan, including the social infrastructure components, please see:

Infrastructure Canada. (2018). Investing in Canada. Retrieved from http://www.infrastructure.gc.ca/site/alt-format/pdf/plan/icp-pic/IC-InvestingInCanadaPlan-ENG.pdf

Employment and Social Development Canada. (2018). Early Learning and Child Care. Retrieved from https://www.canada.ca/en/employment-social-development/programs/early-learning-child-care.html

Place to Call Home. (n.d.). Canada's National Housing Strategy. Retrieved from https://www.placetocallhome.ca/pdfs/Canada-National-Housing-Strategy.pdf.

CHINA: REFORM OF INVESTMENT AND FINANCING SYSTEM FACILITATES TRANSPORT INFRASTRUCTURE CONSTRUCTION

Introduction

In the past five years, China has continued to witness profound changes in its economy and society, and has made positive progress in economy, innovation, poverty alleviation, environmental protection and other fields. On one hand, the economy has maintained a medium and high-speed growth rate, and the growth quality has been significantly improved. GDP has surged from RMB 54 trillion to 83 trillion, ranking second in the world, which has contributed over 30 per cent to global economic growth. The proportion of the service industry in GDP has surpassed 50 per cent for the first time, making it the main driver of economic growth. China has ascended to number two in the world by whole-society R&D investment scale, and has also taken lead in the world in aspects of high-speed rail network, e-commerce, mobile payments, the sharing economy, etc. On the other hand, social development has become more inclusive and sustainable. The annual growth rate of resident income has reached 7.4 per cent, exceeding the economic growth rate, and the world's most populous middle-income group has formed in China. Poverty reduction has made decisive progress, with the number of the poor decreasing by more than 68 million and the incidence of poverty declining from 10.2 per cent to 3.1 per cent. The energy and water consumption per unit of GDP has both dropped by 20 per cent, and the number of days with heavy pollution in key cities has reduced by half. As a whole, China, the world's largest developing economy, is expected to build a moderately prosperous society by 2020.

Infrastructure has played an important role in boosting the economic and social development of China. A study indicates that the contribution rate of transportation to the domestic economy has risen from 3.5 per cent in 2012 to 4.3 per cent in 2016, and transport infrastructure has already become a driver of the economic and social development. By the end of 2017, the total mileage of roads has reached 4.77 million kilometers in China, and the operating mileage of railways has achieved 127,000km. Notably, the mileage of highways has exceeded 130,000 kilometers and that of high-speed rails has surpassed 25,000km, both ranking number one in the world. The number of berths at the 10,000-ton level and above at ports has come to 2,366, while the total mileage of inland waterways has reached 127,000km, including 12,500km for high-grade waterways. The number of certified civil aviation airports has come to 229. The road network, rails, ports and airways have been basically interlinked horizontally and vertically, making China's comprehensive transportation system shift from 'five in the lengthwise and five in the transverse" to "ten in the lengthwise and ten in the transverse'. This advancement has not only allowed people to travel in a more convenient way, but also played a guiding and supporting role in serving the domestic strategy, connecting economic zones, facilitating the development along the routes, and strengthening interconnection and intercommunication.

Pre-reform situation

The investment and financing system is an important systematic factor of transport infrastructure construction and management. Before a new round of reform of the investment and financing system, China has already explored the investment and financing models of transport infrastructure. For instance, to address the fund shortage issue at the early stage of China's reform and opening up, China has expanded the sources of funds for road construction

through various channels, including work relief, raising the road toll standard, imposing surcharges on vehicle purchases, fund-raising or bank loans, developing government loan roads as well as operating toll roads, etc. In the railway construction field, China has gradually adopted the management contract responsibility system and explored a new model of 'ministerial-provincial cooperation' to advance the construction. In terms of ports, China has encouraged owner units to build dedicated wharfs on their own, and continuously stepped up the building of ports through measures such as imposing port construction fees. With regard to airports, China has strengthened the central support, arranged civil aviation development funds and investment within the central budget to accelerate the airport construction. Since 1992, China has viewed transport infrastructure construction as a key priority to facilitate domestic demand. Through preferential systems and policies, China's transport infrastructure construction has been actively invested by the central government, local governments and enterprises, vigorously attracted foreign investment and received support from other funds. From 1992 to 2008, the fixed asset investment in the transport sector has surged nearly 30 times, and a batch of world-class transport infrastructure projects have been successively built, including the Qinghai-Tibet Railway, the Beijing-Tianjin Intercity Railway and the Hangzhou Bay Bridge.

During the construction and development of transport infrastructure, some issues have also shown up, such as poor coordination between departments and complicated approval procedures. In addition, we both witness the excessive government interference in investment and financing activities and the enterprise fail to play a key role in facilitating investment. In some regions, the impulse for blind expansion of transport infrastructure, the unsound exit mechanism and poor return, and significant problems in transformation of regional transport investment and financing platforms have emerged. Targeting these issues, China urgently needs to further deepen the reform of the investment and financing system in its transport infrastructure sector, enhance the key role of enterprises in investment, clarify the investment boundary of the government, loosen and motivate social investment, and inspire private investment potential and innovation vitality. China provides vigorous support for the sustainable and healthy development of transport infrastructure by clarifying the investment financing relationship, improving the investment and financing efficiency.

Policy response

To effectively address the issues arising from transport infrastructure investment and financing, China has launched several reforms targeting the infrastructure investment and financing system and mechanism. China has issued 'Guidance on Deepening the Reform of Transport Infrastructure Investment and Financing' and 'Guidance on Deepening the Reform of the Investment and Financing System' in succession between 2015 and 2016. The overall direction of the two documents is to scientifically define and strictly control the scope of investment by the government, play a guidance and leading role of the government in investment, clarify the investment subject position of enterprises, treat various investment subjects equally, and loosen and motivate social investment. Under the guidelines of the above documents, key tasks as follows have been implemented nationwide:

First, the boundary between investment by the government and enterprises has been accurately defined. The documents made clear that non-operating projects and government loan roads generating certain benefits should be directly invested by the government, while operating projects should be fully invested by enterprises on their own in principle. If the government support is indeed required, the capital injection should be the main form, and subsidies and interest discounts should be auxiliary forms. For operating PPP projects, the government should not arrange investment funds in principle, but for projects that indeed need the

government's support, they should undergo a series of procedures, such as scientific argumentation, approval, budget management and information publicity.

Second, the content of investment management by the government has been clarified. Starting with key procedures such as budget management, appraisal and approval, information publicity and process and after-event supervision, the government has established a collaboration mechanism across the departments of transport, finance development and reform, and domestic land resources; studied the three-year rolling budget and the organic connection between appraisal and approval; and explored models such as the third-party assessment, which has improved its investment management capabilities.

Third, the PPP model has been vigorously advanced. The government has simplified and standardized the approval of PPP projects, and focused on studying the transformation of stock projects to the PPP model, and explored project bundling and 'road + tourism' resource bundling models to integrate relevant resources, so as to reasonably reward social capital.

Fourth, the transformation of transport financing platform companies was promoted. Financing platform companies must become the investment subject of infrastructure projects through the cooperation between the government and social funds according to the requirements of debt elimination, institutional reforms and business transformation, on the premise that they are not reliant on the credit of the government and able to operate independently.

Fifth, innovative transport investment and financing mechanisms were established. The government has raised capital through government investment funds, pushed forward the implementation of projects in a combination of the PPP model, and established and improved related mechanisms for duration matching, effective exit, risk sharing, etc.

Impact

The deepening of China's investment and financing reform in transport sector has fully mobilized enthusiasm from all walks of life, provided broad investment channels and vigorous financial support for transport infrastructure construction, and basically shaped the multi-channel and multi-form sources of construction funds featured by investment by the government, fund-raising by regions, social financing and introduction of foreign capital, which has broken the situation in which the economy is the unitary source of funds and the only investment subject for infrastructure construction. The allocation of transport infrastructure construction funds has been significantly optimized, infrastructure quality has been remarkably improved, and the trading market has been basically established. Besides, interconnection and intercommunication have been further strengthened, and transport infrastructure has further boosted the economic development and benefited people's well-being. For example, in 2014, Shanxi province, located in the central part of China, raised capital of RMB 88.365 billion by enhancing the debt risk control and optimizing the debt structure, and lowered the off-balance-sheet financing rate from the average level of 10.46 per cent and the maximum level of 12.99 per cent to less than 8 per cent, which has reduced interest payments by RMB 867 million. In 2015, the province cancelled, integrated and handed over nine highways-construction and management departments, so that there was no need to set up new institutions for three new government loan roads under construction. It also took initiative to open up the investment market, incorporated 30 highway and trunk highway projects into the provincial government's catalog of 46 projects invested by social funds, and invested in the construction of a few highways by means of build-operate-transfer (BOT) and build-transfer (BT) financing, equity receiving, etc. Zhejiang province – which is located in the east of China and has a more advanced economy – developed resources along roads, and changed the status quo of return on investment in highways via tolls. By building large transport investment and

financing platforms, the province collected hundreds of billions of road and railway assets, which has not only strengthened its anti-risk ability and significantly improved its credit rating and financing capacity, but also cut financing costs. New investment and financing models have been constantly emerging and have been widely applied. Take investment and financing in urban rail transits, for example. Comprehensive development models, such as 'rail + property management', 'rail + community' and 'rail + town', as well as diversified fund-raising models, such as the PPP model and bond issuance, have taken shape in some regions, and appropriate ways of development have been used to facilitate the rail transit construction.

Challenges and lessons

China has encountered a lot of challenges in implementing the reform of the transport infrastructure investment and financing system. For example, the fuel tax reform faced issues such as inadequate tax revenue, failure to achieve maintenance, construction and other targets, and incomplete capital management and allocation mechanisms. The PPP model was not implemented smoothly due to complicated approval procedures and imperfect mechanisms for return on investment, exit and sharing. The transformation of transport investment and financing platforms also met with some difficulties as the economy stepped up its efforts to rectify local debt and strictly control its scale. China should solve these problems as a whole by enhancing its top-level design in the future.

China's development process indicates that transport infrastructure has been playing a basic, leading, supportive and service-centered role in transport sector and even the entire economic and social system. China's efforts in advancing the reform of its investment and financing system for transport infrastructure construction offer two points of inspiration for other economies: First, the government must play a positive role in transport infrastructure construction and investment & financing activities. Transport infrastructure construction boasts a long cycle, capital intensity and economic efficiency of the network, and many projects even possess the attribute of being beneficial to the public. The government should dominate the investment of large public benefit transport infrastructure through the formulation of dedicated development plans. For operating projects that indeed need the government's support, the government should take measures such as interest discounts, and scientifically guide and reasonably arrange the transport infrastructure construction. Second, the government must redouble its efforts to enhance the reform of the transport infrastructure investment and financing system and carry out institutional innovation. Since its reform and opening-up, China has been constantly exploring new tools, models and practices of transport infrastructure investment and financing, such as establishing various transport construction funds, imposing transport infrastructure management and construction taxes and fees, utilizing bank loans at home and abroad, raising funds directly from the capital market, building large transport investment and financing platforms, and widely applying the PPP model. These explorations have not only reduced financing cost and improved the financing efficiency, but also mobilized the enthusiasm of social capital and created favorable conditions for the sustainable and healthy development of transport infrastructure.

INDONESIA: PPP GOVERNANCE STRUCTURAL REFORM AND FINANCING SUPPORT FOR INFRASTRUCTURE PROVISION

I. Introduction

Before 1990s, PPP had been recognized and applied as an infrastructure provision method in Indonesia. However, PPP governance was not sufficient, with low sector coverage and poor risk management. These had led to low accountability, depriving and limiting private interest or participation in infrastructure provision through PPP. To meet a surging need in infrastructure development, the government of Indonesia needs to seek alternative financing to complement existing financing needs for infrastructure provision. Indonesia's budget constraint is impeding infrastructure provision as it is projected that the infrastructure financing needs in RPJMN (National Medium Term Development Plan) period of 2015–2019 will reach IDR 4,796.2 trillion (Ministry of Finance, 2017). Infrastructure budget spending had been increased from IDR184.3 trillion in 2013 to IDR 410.4 trillion in 2018 or 28.22 per cent of the government's total expenditure in 2018 (Ministry of Finance, 2018). Although it experienced yearly incremental change in infrastructure budget spending, Indonesia's infrastructure spending is relatively low compared with other growing economies. In 2017, Indonesia's infrastructure spending accounted for only 2.85 per cent of Indonesia's GDP[8] (Statistics Indonesia, 2018; Ministry of Finance, 2017).

As an alternative method to tap and increase third-party financing for infrastructure development, the government has set up and advanced its PPP governance. The changing paradigm in Indonesia's PPP model is expected to yield investor trust and commitment in spurring fair growth by means of infrastructure development. Furthermore, the government of Indonesia has issued Presidential Regulation 38/2015 (PP 38/2015) regarding PPPs in infrastructure provision. The PP 38/2015 marked a new paradigm in Indonesia's PPP governance.

II. Pre-reform situation

Before 2008, PPP governance in infrastructure provision was inadequate and unable to oversee robust coordination among stakeholders. The PPP regime (Presidential Regulation 67/2005) did not cover the needed instruments in supporting PPP structure and limited certain stakeholder involvement (e.g., state-owned enterprises or SOEs) in financing PPP projects. The government's stakeholder transition period of adapting the new PPP governance was also characterized by capacity imbalance, diverse conceptions of PPP and measurement, and an inability to detach from traditional infrastructure provision sourced from the government budget. This has hindered PPP governance from progressing, as good PPP governance and implementation need solid interaction from stakeholders with complex arrangements (structure/scheme) to perform well.

[8] GDP at current prices

Aside from inadequate governance, there was also a lack of coordination among stakeholders of PPP projects, which is limiting support in managing complex and intensive PPP networks and phases (initiative, planning, preparation, project bidding, implementation and evaluation). In the preparation phase, credibility becomes an issue due to the low quality of PPP project preparation, limited funding allocations as well as the unavailability of a guarantee. Consequently, these issues have led to a marginal creditworthiness and has potentially triggered the 'market punishment' of an excessive price for a project.

Other issues, specifically related with financing policies response, are unreliable land acquisition, contingent liability and PPP project creditworthiness. Infrastructure projects are often constrained by a problem with land acquisition, thus delaying the delivery time for PPP projects. High political risk, entangled with poor risk management, has made PPP projects unattractive for the private sector and at the same time directly places a heavy contingent liability on the government budget. A government blanket guarantee unequipped with sufficient agreements but rated as sufficient guarantees and leverages creditworthiness, yet posed a great risk toward the government budget.

It is considered imperative to increase PPP governance and to provide financial support in order to make PPP projects attractive for investors to participate.

Policy response

Indonesia has been using the PPP method in infrastructure provision for limited sectors since the 1980s. However, in general, the policy response initiative can be represented, since 2005, by Presidential Regulation 67/2005 which enlarged infrastructure types that can be provided through PPP schemes, and which since then has been continuously enhanced and complemented with other supporting policies. For example, in 2008, there were policies and regulations issued to speed up PPP projects, such as the Fast Track Program and the establishment of certain showcase projects. However, by 2014, there had been only one PPP project agreement signed, which had not reached a financial close.

Furthermore, significant structural reform was implemented in order to increase PPP governance since 2014. This reform was marked as a paradigm shift in Indonesian PPP. The issuance of policies and regulations has enhanced PPP in Indonesia in terms of:

- Better PPP governance and planning
  - Stronger mandate, increasing capacities, and robust coordination between stakeholders.

    In 2014 the government, through Presidential Regulation 75/2014, has established the Priority Infrastructure Provision Acceleration Committee (KPPIP) revitalizing the National Committee for the Acceleration of Infrastructure Provision or KKPPI with a stronger mandate. The KPPIP's objective is to lead and coordinate infrastructure development acceleration particularly in debottlenecking problems in infrastructure development. The improvement measures are supported by the development of the capacity of the Ministry of Planning or Bappenas in providing project preparation facilities focusing on outline business case (OBC) development. The synergy between the KPPIP and Bappenas is expected to result robust PPP Pipeline and improve the planning process. To strengthen the procurement process,

the government issued the Head of National Public Procurement Agency (NPPA) Regulation number 19 of 2015 that guides the PPP procurement processes to be more effective, fair, competitive, transparent and accountable. In addition, a PPP unit was developed within the Ministry of Finance in 2015. The main roles of the unit are to manage the Project Development Facility (PDF) in structuring the final business case (FBC) and ensuring the transaction process done properly.

- Widen sector coverage and PPP scheme enhancement.
  With the latest PPP regulation (Presidential Regulation 38/2015), infrastructure sector development coverage is widened, from only revolving around three sectors before 2005, broadening to eight and becoming 19 in the current PPP regime. Presidential Regulation 38/2015 also stipulates a guarantee and payment scheme, allowing private sectors to mitigate their risks and at the same time increase the appeal of PPP projects.

- Fiscal support and facilities for PPP projects
  The government of Indonesia has provided a robust guarantee scheme and improved financing facilities for PPP projects.
  - Land acquisition financing support (Ministry of Finance Regulation No. PMK 21/PMK.06/2017) from the National Asset Management Agency
  - A Project Development Facility (PDF) (Ministry of Finance Regulation No. 265/ PMK.08/2015 and No. 129/PMK.08/2016): A facility used to support preparation phase and transaction support.
  - A Viability Gap Fund or VGF (Ministry of Finance Regulation No. 223/PMK.011/2012): A facility provided to support creditworthiness of a PPP project and to have an affordable service provision.
  - Availability Payment or AP (No 260/PMK.08/2016): AP is a payment scheme for service provision directly from the government of Indonesia that includes capital expenditure, operational expenditure and rate of investment, thus mitigating demand risks for the private sector. The scheme is suitable for social infrastructure projects such as hospitals, schools, etc.
  - Guaranteed support (Presidential Regulation 78/2010 and Ministry of Finance Regulation 8/PMK.08/2016) to increase PPP project creditworthiness, appeal to investors and a part of risk management in PPP projects.

The PPP Unit within the Ministry of Finance manages the fiscal government support and facilities for PPP projects, except for land acquisition financing support which is managed by the National Asset Management Agency.

Matrix 1. PPP Structural Reform Phases

	Phases		
Time Period	**I (1998–2005)**	**II (2005–2013)**	**III (2014–Present)**
General	• Private participation in infrastructure provision: o Sectoral frame	• Presidential Regulation 42/2005 about National	• Presidential Regulation 42/2005 revitalized with Presidential Regulation 75/2015about Committee for Acceleration of Priority Infrastructure Delivery (KPPIP) which gave stronger mandate than before (KKPPI)

	o Electrical infrastructure provision regulation o Independent Power Producer (IPP) is re-negotiated. o Infrastructure provision regulations issued	Committee for the Acceleration of Infrastructure Provision (KKPPI) • PPP Provision (President Regulation 67/2005)	• PPP provision enhanced (President Regulation 67/2015), emphasizing regulation on infrastructure provision through PPP (President Regulation 38/2015) with sectoral scope enlarged from previously 8 to 19 sectors. • Planning Ministry Regulation on infrastructure provision through PPP (Permen PPN/Bappenas No. 4/2015) • Head of National Public Procurement Agency Regulation on Infrastructure procurement through PPP (No. 19/2015) The establishment of PPP Unit Ministry of Finance in 2015 • PPP Book	
			III (2008–2010)	**IV (2010–present)**
Financing Support and Guarantee	• Blanket guarantee through support letter (direct exposure towards government budget).	• Blanket guarantee through support letter (direct exposure towards government budget).	• Government guarantee in PPP project (President Regulation 78/2010) • Specific risk guarantee with guarantee letter (direct exposure towards government budget). • Establishment of PT Indonesia Infrastructure Finance (IIF, co-ownership) and PT Sarana Multi Infrastruktur (SMI, State-Owned Enterprises) for financing support • Establishment of Indonesia Infrastructure Guarantee Fund or IIGF (SOE) for guarantee support for more prudent and professional guarantee provision • Guarantee support, specific risk guarantee through Guarantee Agreement	• New Fiscal government supports : o Viability Gap Fund (VGF), o Land acquisition financing support • New Fiscal Facility to prepare a PPP Project named Project Development Facility • New return on investment scheme is introduced named Availability Payment scheme

Impact

With these structural reforms of PPP governance for infrastructure provision, Indonesia has achieved the needed improvements in scaling its infrastructure development. Indonesia's infrastructure quality is recognized and improved. There are currently 14 PPP projects that have reached financial close (Table 2).

Table 2. PPP Contract and Financial Close

No.	Project Name	Project Cost (IDR) Trillion	Financial Facility and Guarantee
1.	Central Java Power Plant Project	40	Guarantee (MoF and IIGF)
2.	Umbulan Water Project	2.1	PDF, VGF and IIGF Guarantee
3.	Palapa Ring Project–West Package	1.28	PDF, IIGF Guarantee and AP
4.	Palapa Ring Project–Central Package	1.38	PDF, IIGF Guarantee and AP
5.	Palapa Ring Project–East Package	5.13	PDF, IIGF Guarantee and AP

6.	Batang–Semarang Toll Road Project	11	IIGF Guarantee
7.	Manado–Bitung Toll Road Project	5.1	IIGF Guarantee
8.	Balikpapan–Samarinda Toll Road Project	9.9	IIGF Guarantee
9.	Pandaan–Malang Toll Road Project	5.9	IIGF Guarantee
10.	Serpong–Balaraja Toll Road Project	6	IIGF Guarantee
11.	Jakarta–Cikampek Toll Road Project	16	Co-guarantee (IIGF and MoF)
12.	Krian–Legundi–Bunder–Manyar Toll Road Project	12.2	Co-guarantee (IIGF and MoF)
13.	Serang-Panimbang Toll Road	5.33	Co-guarantee (IIGF and MoF)
14.	Cileunyi Sumedang-Dawuan Toll Road	8.21	Co-guarantee (IIGF and MoF)

Source: Ministry of Finance, 2017

III. Challenges and lessons

While PPP governance reform has brought substantial results to Indonesia infrastructure development, the need for infrastructure development is still huge while there are also rooms for improvements. Several challenges for the current PPP governance that need to be improved are as follows:

- Increasing stakeholder capacities in PPP governance, especially local government capacities. In addition, sector coverage needs to be expanded to cover other infrastructure services with better infrastructure quality.
- Standardizing project preparation document to ensure the quality of the business cases offered to the private sector to attract broader investors and lenders, including international parties.
- Coordinated PPP financing support, especially for support coming from donors under the fiscal authority. The support could be formed as pooling funds for project preparation.

From PPP governance structural reform experience, it is imperative to have a continuous process and efforts in enhancing PPP governance. Challenges regarding stakeholder involvement and perspective need to be addressed with careful approaches and innovative instruments. Such approaches and instruments will better the accountability and risk management of PPP governance. Thus, it will later increase the attractiveness of PPP for the private sector as one alternative in filling the financing gap in infrastructure development.

References

Ministry of Finance. (2017). "Partnerships Indonesia" A Trust Fund for An End-To-End Development of Indonesia PPP. "Partnerships Indonesia" A Trust Fund for An End-To-End Development of Indonesia PPP. Jakarta, DKI Jakarta, Indonesia: Ministry of Finance.

Ministry of Finance. (2017). Dukungan Pemerintah Untuk Mendukung Proyek KPBU dalam Penyediaan Infrastruktur. Dukungan Pemerintah Untuk Mendukung Proyek KPBU dalam Penyediaan Infrastruktur. Jakarta, DKI Jakarta, Indonesia: Ministry of Finance.

Ministry of Finance. (2017). Government of Indonesia (GoI) Support In PPP Projects. Government of Indonesia (GoI) Support In PPP Projects. Jakarta, DKI Jakarta, Indonesia: Ministry of Finance.

Ministry of Finance. (2017). Info Risiko Fiskal; KPBU: Pembiayaan Infrastruktur dalam Menjaga APBN yang Sehat. Retrieved from djppr.kemenkeu.go.id: http://www.djppr.kemenkeu.go.id/uploads/files/IRF/IRF%20EDISI%202%20-%202017%20Final.pdf

Ministry of FInance. (2017). Pedoman Penjaminan Infrastruktur Dalam Pelaksanaan KPBU Bidang PUPR. Retrieved from Layanan Informasi dan Konsultasi Investasi Infrastruktur PUPR: http://lintas.pu.go.id/dist/dok/pedoman_1513391938_Pedoman-Penjaminan.pdf

Ministry of Finance. (2017). Penjaminan Pemerintah Untuk Infrastruktur. Penjaminan Pemerintah Untuk Infrastruktur. Jakarta, DKI Jakarta, Indonesia: Directorate General of Budget Financing and Risk Mangement, Ministry of Finance.

Ministry of Finance. (2018). Informasi APBN 2018. Retrieved from kemenkeu.go.id: https://www.kemenkeu.go.id/media/6886/informasi-apbn-2018.pdf

MEXICO: ENERGY INDUSTRY REFORM

Introduction

Mexico is the 12th largest economy and 13th largest export economy in the world. The profound transformation of the Mexican economy over the last years has increased its energy consumption. Thirty years ago, Mexico began the path of integration into the global market. With the growth and diversification of its foreign trade, manufactures left behind crude oil as the main export product. The manufacturing sector now contributes 90 per cent of Mexico's exports, while in 1990, crude oil represented 38 per cent. More than 70 per cent of Latin American high-tech exports originate in Mexico and the economy went from exporting auto parts to exporting complete automobiles. In the same period, energy consumption patterns changed. A majority of the population (80 per cent) now live in cities and each Mexican consumes on average 63 per cent more electricity than in 1997.

Today, 120 million Mexicans consume 54 per cent more energy, and more than twice the natural gas of 90 million in 1997. Hydrocarbons now account for 86 per cent of domestic energy consumption. As Mexico's population grows, the economy needs to provide a rising energy demand. Meanwhile, energy output has declined. Oil production has fallen steadily for 13 years. In 2017 Mexico produced 1.95 million barrels per day; 42 per cent below the peak of 3.4 million barrels per day reached in 2004. The total production of crude oil, natural gas and condensates today is similar to that of 20 years ago. The growing deficit in energy output has turned Mexico into a net importer of natural gas and oil products: 70 per cent of the gasoline and diesel used for transportation and 65 per cent of natural gas demand are covered with imports.

Moreover, in the past decades investment in energy infrastructure was insufficient. In 2012, Mexico's gas network was only 11,347km, while 11 states did not have any coverage infrastructure. That year, Mexico's demand surpassed capacity in its natural gas transport infrastructure. That led to interruptions in the natural gas supply, increasing the risk in operational safety and forcing Pemex – as operator of the transport network – to ask interconnected users to reduce their consumption for certain periods of time, which became known as critical alerts. Between 2012 and 2013, there were 35 critical alerts, with severe economic consequences on industrial consumers. In 2013, the Bank of Mexico estimated that critical alerts caused a drop of 0.3 points in the GDP. In the oil products sector, underinvestment also increases operational risk. Mexico had just three days of fuel inventories, not enough for the fourth largest gasoline market worldwide.

Pre-reform situation

In 2013, Mexico's hydrocarbon industry monopoly reached the limit of its capacity. Before the reform, the Constitution bound Pemex to carry out on its own all the activities of the oil industry, regardless of the financial, operational, or technological restrictions to which it was subject. Pemex was the only company that could extract the hydrocarbons from the subsoil. Despite historically high investments in exploration and production of hydrocarbons, oil output went from 3.4 million barrels per day in 2004, to 2.5 million barrels per day in 2013, a decrease

of 26 per cent in just 10 years. The natural gas production spun two years in a row of decline: In 2012, the natural gas production of 4.6 billions of cubic feet equivalent (Bcfd) was 8 per cent lower to the production in 2010 (5 Bcfd), the peak of historical production.

Despite the high investment of Pemex in E&P, it was not enough. According to estimates of the International Energy Agency, reaching a three-million-barrel oil output in Mexico would require approximately 640 billion dollars in the next 25 years, equivalent to 25.6 billion dollars per year (IEA, 2016). While Pemex estimations suggested investments of more than 60 billion dollars per year to develop to the maximum the resource potential of Mexico. In 2017, Pemex only had about 18 billion dollars in its annual plans for E&P activities. Even with a more attractive fiscal regime, this investment would be insufficient to develop Mexico's resources and to provide an adequate supply of energy for future demand.

Without additional investment, the forecast for Mexico's hydrocarbon production was not very encouraging, particularly since no major discoveries had been announced since 2008 to restore oil and gas reserves. This implied that Pemex would continue to produce less hydrocarbons in the following years.

The absence of competition in the sector caused a lack of investment in the oil value chain that was reflected in the sustained increase in imports of fuels and natural gas. Currently 65 per cent of the natural gas consumed in the economy is being imported. Furthermore, the imports represented 90 per cent of the demand if Pemex's own consumption is excluded. In the fuels market, a combination of limited refining capacities, underutilization and rising demand let to Mexico's turning into a net importer of oil products. In 2017, Mexico's oil products imports represented 68 per cent of domestic demand.

Furthermore, Mexico's infrastructure capacity for transport and distribution of natural gas and petroleum products did not grow at the same pace as its demand. Higher use of inefficient alternatives like trucks increased operational risks and costs, raising prices of these products and limiting industrial use. Regarding oil products infrastructure, Mexico is the economy with the lowest storage capacity after Colombia, which is an economy with a fuel consumption almost seven times lower than that of Mexico. Additionally, we can observe a significant delay in pipeline infrastructure in comparison to the United States and Canada, despite the fact that the latter has a fuel demand three times lower than Mexico.

In the power sector, without the same efficiency gains made in networks and other parts of the system, the costs of electricity supply are higher, meaning higher prices for industry and an expanded subsidy bill for households (a cumulative USD 135 billion to 2040) to avoid sharper rises in residential electricity tariffs. Without specific policies to increase the role of clean energy, lower deployment of renewables leaves Mexico well short of its clean energy targets; the repercussions extend beyond the energy sector and into the wider economy.

Ultimately, another problem identified that gave rise to the need of the new structural reform was that Mexico's pre-reform energy pathway was not a sustainable one: the cumulative gains in GDP from the Reform to 2040 are estimated at more than USD 1 trillion, compared with a case in which the reforms do not take place.

Policy response

Since the government enacted energy reform in 2013, the energy sector is in a period of profound change. New investment and technology are brought to the table, across the hydrocarbons value chain by ending the monopoly of PEMEX and by attracting new players into the power sector to ensure cost-efficient investment into both traditional and low-carbon sources of electricity. The reform package implemented new structures for the oil, gas, and power industries in Mexico, and recasts the structures that have governed the energy sector for over 80 years.

The Reform put an end to the government monopoly on oil and gas production and on electricity retail sales. These changes have drastically altered the hue of policy and policymaking in Mexico, and therefore the outlook for energy prospects.

Key aspects of the constitutional amendments that have been passed are the Electricity Law, the Hydrocarbons and Hydrocarbons Revenue Laws, the PEMEX Law, the CFE (Federal Electricity Commission) Law, and the establishment of the Mexican Petroleum Fund for Stabilization and Development.

- Electricity Law: since 1992, CFE has monopolized the generation market and transmission and distribution. The new Electricity Law helps develop a competitive electricity market by reorganizing the vertical structure of CFE and offers SENER (Mexican Ministry of Energy), the CRE (Energy Regulatory Commission) and to CENACE (National Center for Energy Control) regulatory and market-control capacities.
- Hydrocarbons Law and Hydrocarbons Revenue Law: this law allows the private sector to contribute in upstream activities, through four new contract types: license, production-sharing and profit-sharing contracts, as well as service agreements. New responsibilities are assigned for regulation to the CNH (National Hydrocarbons Commission), and an independent operator, CENEGAS (National Gas Control Center), is in charge of the natural gas pipeline network. Furthermore, SENER receives the authority to grant permits for petroleum treatment and refining, processing of natural gas, import and export of crude oil, natural gas and petroleum products, and activities that were previously exclusive to PEMEX.
- PEMEX Law: with this law, PEMEX becomes a ‘state productive enterprise’, which obliges it to pay dividends to the new ‘Petroleum Fund for Stabilization and Development’ (30 per cent of revenues in 2016, decreasing until 0 per cent in 2026 when the Ministry of Finance and Public Credit will determine the dividend). PEMEX will also be able to partner with private enterprises in the hydrocarbon value chain and to bid for exploration and extraction blocks in tenders held by the government.
- CFE Law: also becomes a ‘state productive enterprise’ with dividend obligations to the federal government, with a reorganization of the corporate governance structure.
- The establishment of the Mexican Petroleum Fund for Stabilization and Development, under the management of the Central Bank and a board comprising the ministers of finance and energy. The chairman of the central bank and four independent members are nominated by the president and ratified by the Senate. All royalties and resource rents from the oil and gas sector will be held in this fund. The right to withdraw from this fund to finance the government budget is capped at 4.3 per cent of GDP.

Energy governance has also been transformed with the reform. A number of responsibilities that were the domain of state-owned monopolies have been transferred to independent regulatory bodies. These include the CNH and the CRE. The reform is part of a broader vision by the government to pursue energy policies that reconcile energy security imperatives with sustainability and efficiency considerations, and a general recognition of the need to shift to a low-carbon growth model. This underpins the National Energy Strategy (2014–2027); the Energy Transition Law (passed in December 2015) and the far-reaching climate pledge submitted in advance of the Paris COP21.

Summing up, the reform opens the long-closed oil, gas and electricity sectors to competition. It turns the state-owned monopolies PEMEX and CFE into state productive enterprises, which are expected to follow a business-driven strategy and to strengthen incentives for investments from old and new players.

Regarding the regions and population benefitted by the reform, natural gas pipeline expansion is an excellent example. The expansion of the pipeline network will benefit 26 states, which represent 98 million inhabitants, equivalent to 82 per cent of the total population of Mexico. The recent published storage policy for natural gas will allow Mexico to have at least five days of consumption in 2026 to secure continuous supply. Furthermore, in oil products, the Public Policy on Minimum Stocks of Oil Products issued by SENER will allow to guarantee market supply for all regions: by 2025, up to 13 days of consumption will be the minimum storage obligation to be fulfilled by participants in the wholesale and retail markets.

Impact

In just three years since the approval of Mexico's energy reform, the oil sector is undergoing a deep transformation: 71 new companies, in addition to PEMEX, have signed 76 contracts for the exploration and production of hydrocarbons, which could represent investments of USD 161 billion in case of commercial success. Twenty seismic companies have invested USD 2 billion that have made the Mexican part of the Gulf of Mexico the area with the highest seismic coverage in the world. Eleven companies invested USD 12 billion in the largest expansion of natural gas pipelines in history. In logistics – storage, transportation and distribution of gas and oil products – 70 companies participate, with an estimated investment of USD 5 billion. In retail fuel, more than 40 new brands other than PEMEX compete to serve the economy's consumers. In total, the reform represents a potential investment of USD 180 billion in the entire hydrocarbons value chain, with more than 170 private firms competing with PEMEX.

SENER has published public policies with the objective of increasing Mexico's hydrocarbons storage capacity for both natural gas and oil products. These policies will allow Mexico, for the first time in its history, to build strategic reserves of natural gas, gasoline, diesel and jet fuel, to ensure continuous supply of fuels in emergency situations, as well as the construction of infrastructure for the storage, strengthening domestic energy security. Moreover, these policies include an obligation to report information on transactions, inventory levels and trades. This information will allow SENER to create an aggregate supply and demand balance by region, which will provide crucial information to all participants in these markets. For natural gas, the minimum inventory will be five days of sales in 2026, while for oil products, it will be up to 13 days in 2025.

The outlook for developing Mexico's oil and gas resources has been reshaped by the reform. The decline in total oil production bottoms out in 2018 at 2.3 mb/d, before climbing to 3.4 mb/d by 2040. Gas production follows a similar trajectory to oil, as much of the output is associated gas; but towards the end of the projection period, Mexico starts to see larger scale development of its considerable shale gas resources. Total gas production rises to 60bcm, but Mexico remains a sizeable importer of gas from the United States throughout the period to 2040, benefiting from the availability of competitively priced imports. As Mexico's natural gas use increases, so does the importance of good interconnections and market operation, and gas storage to meet fluctuations in demand.

Electricity wise, demand grows robustly by 85 per cent, being that the largest growth comes from the buildings sector, yet industry remains the largest consumer. The role of gas and low-carbon sources in lifting generation from 300 TWh to more than 500 TWh by 2040 heralds a sharp reduction in the greenhouse-gas emissions intensity of the power sector. Solar PV and wind account for around half of total investment in generation and half of generating capacity additions over the period, helping Mexico to achieve its long-term targets for electricity generation from clean power sources. CO2 emissions from power generation are around 20 per cent lower in 2040 than in 2014.

The new policy and market design provides a substantial boost to Mexico's clean energy efforts: more than half of the 120 GW of new power generation capacity installed to 2040 is renewable-based. This halves the emissions intensity of power generation; from more than 450g CO2/kWh in 2014 to 220g CO2/kWh in 2040. A distinctive feature of Mexico's reform in the power sector is that clean energy has been integrated into the reform package from the outset.

As a result, by 2040, oil production is some 1 mb/d lower than in the New Policies Scenario. In the power sector, without the efficiency gains made in networks and other parts of the system in the New Policies Scenario, the cost of electricity supply is higher. Without specific policies to increase the role of clean energy, lower deployment of renewables leaves Mexico well short of its clean energy targets.

Challenges and lessons

At the time the reform was approved, Mexico had almost eight decades operating with a monopoly in charge of almost every activity in the oil and gas sector. As implementation of the new energy model moves forward, it will be important for all the agencies to remain focused on the overarching goal to build open, efficient and competitive markets. Simplification of regulation should be part of the agenda, as the day to day operation of new players, from exploration and production to retail, identify areas of opportunity to streamline processes, reduce the cost of compliance and improve the processes to approve permits. One example of the importance of evaluation during implementation happened during the early licensing rounds of exploration and production contracts. The exchange between regulators and private companies participating in licensing bids facilitated understanding of results, leading to a faster adoption of international best practices, for example publication of minimum bidding variables, streamlining of pre-qualification criteria and simplification of bidding rules. This review improved Mexico's bidding system, which has led to 107 contracts signed in 9 licensing rounds, with competitive results and a 74 per cent government take.

In the mid- and downstream sector, private companies are responding to public policy and to the opportunity of doing businesses in the 12th largest economy in the world. Currently, there are more than 40 projects for oil products storage. In order to comply with the new strategic storage policy of up to 13 days of fuel consumption in 2025, 13 of the largest announced projects should be built, in addition to operating capacity for new players in the market. Managing to complete these projects will require continuity in policy implementation, to provide certainty to investors. Regulators should constantly evaluate their permitting process to simplify and improve, reducing the cost of compliance. Entry of new players in the wholesale market will speed up the emergence of competition, in favor of consumers.

Mexico's reform also introduced regulation on prior and informed consultation, and on payments to the owners of land surface rights for the first time in the oil and gas industry. Before this reform, PEMEX was the only company in charge of energy infrastructure projects, which allowed it to resort to eminent domain to move projects ahead. As this new regulation is implemented, it will be necessary to study the best agreements reached by communities, owners and companies to approve projects under the new legislation. This will allow faster adoption of best practice across all the participants in this industry, leading to a consultation and approval process that balances the rights of communities and owners, while reducing risks for construction and operation of new infrastructure.

The implementation of Mexico's energy reform has important lessons for future reforms. First, follow closely principles of transparency and regulatory certainty to foster competition. Second, actively counter the incentives of incumbents to use their market power. Third, define clear roles and responsibilities for the public and private entities involved to maintain and improve the ability to collect data and monitor the sector's performance. These lessons are embodied in how government and regulatory agencies, such as SENER, the Ministry of Finance, the CNH and the CRE, were restructured to increase their transparency and independence to facilitate competition. For example, their collective ability to adjust bidding terms in response to real outcomes in licensing rounds reflects the objective of holding truly competitive and transparent auctions. PEMEX was restructured as well as CFE, which was unbundled into 11 different subsidiaries opening the way for new players in the energy market.

Another example is the creation of CENAGAS and CENACE, as robust independent system operators of the natural gas and electricity transportation systems, which facilitated open access for new participants to their infrastructure. This has contributed to ensure continuity and security of supply, encouraging competition in these crucial markets.

MEXICO: TELECOMMUNICATION INDUSTRY REFORM

Introduction

According to the OECD Study on Telecommunications Policies and Regulation in Mexico (2012), one of the shortcomings was the lack of competition in the telecommunications market, which caused inefficiency that turned into significant costs on the Mexican economy and that had a negative impact on the population welfare. The sector was characterized by high prices, among the highest of the members of the OECD, and a great lack of competition, which resulted in a low rate of penetration of services and a poor development of the infrastructure needed to provide them.[9]

In addition, regulatory decisions were seldom applied, or their application was suspended by the judiciary's non-specialized courts, which meant less effective development of the regulation and one of the main barriers to competition. This system not only generated the interposition of legal recourse, but also produced economic benefits for the dominant operator and economic damages to the new entrants.

As a result of the 2012 study, the OECD issued a series of recommendations for Mexico which were: 1) guaranteeing low entry barriers and contestable telecommunication markets; 2) ensuring the transparency, non-discrimination and effective application of regulation and related processes and 3) reforming regulation to stimulate competition and eliminate rules unless there is clear evidence that they are the optimal means to serve the public interest.

Consequently, on 2 December 2012, the Pact for Mexico (*Pacto por México*) was signed, which was a political agreement whose main objective was to specify the actions and reforms required by the economy. The commitments of the pact, among which 'promoting the democratization of civic participation', 'addressing inequality and creating opportunities' and 'expanding the effective application of social rights', emerged from a consensus of the needs to carry out a series of structural reforms.

One of these reforms was the telecommunications and broadcasting reform in order to guarantee its social function, so the modernization of the government and the society could be achieved through the information and communication technologies (ICTs); as well as the strengthening of the faculties of the authorities on economic competition.

It is important to note that two of the agreements of the pact for the telecommunications sector were the benefits of an economy formed by competitive markets and the guarantee of equitable access to telecommunications. These agreements included the implementation, of measures such as the creation of specialized courts in economic competition and telecommunications and the establishment of the right to broadband and Internet access as a constitutional guarantee.

---

[9] OECD. (2012). Estudio de la OCDE sobre políticas y regulación de telecomunicaciones en México. Retrieved from https://www.oecd.org/centrodemexico/49528111.pdf.

Pre-reform situation

As mentioned above, the 2012 OECD Study on Telecommunications Policies and Regulation in Mexico and the Pact for Mexico represent significant antecedents of the constitutional reform in telecommunications, as detailed in this section.

On 12 March 2013, the Federal Executive presented to the Chamber of Deputies the initiative that reforms and adds various provisions of the Political Constitution of the United Mexican States, in the field of telecommunications, which aimed to establish various provisions aimed at regulating, modernizing and strengthening the field of telecommunications. Among the proposals, the following stand out:

- To establish that the government will guarantee the universal right of access to ICTs, as well as broadcasting, communication and broadband services, promoting effective competition and quality in their provision.
- Specify that telecommunications and broadcasting are public services of general interest, and they have to be provided in conditions of competition, quality, plurality, universal coverage, interconnection, convergence, free access and continuity.
- Create the following institutions:
    - A Federal Telecommunications Institute (IFT by its acronym in Spanish), as an autonomous body, with legal personality, whose purpose is the efficient development of broadcasting and telecommunications. For this purpose, the institute is responsible for the regulation, promotion and oversight of the use, development and operation of the radio spectrum, networks and the provision of broadcasting and telecommunications services, as well as access to active and passive infrastructure and other essential inputs.
    - A Federal Commission of Economic Competition (COFECE by its acronym in Spanish), autonomous and with legal personality and own assets, and that will have the aim to guarantee the free competition and concurrence, as well as to prevent, investigate and fight the monopolies, the concentrations and other restrictions to the efficient operation of the markets.
- The COFECE and the IFT will be independent in their decisions and operation.
- The IFT will grant the concessions for broadcasting and telecommunications sectors instead of the Telecommunications Ministry (executive branch).
- To empower Congress to enact laws on the subject and adjust the corresponding regulatory frameworks and create the Consultative Council of the Federal Telecommunications Institute.
- Allow direct foreign investment up to 100 per cent in telecommunications and satellite communications sectors, and up to 49 per cent in broadcasting sectors.
- Is mandatory for public television concessionaires to offer their signals to other operators at no additional cost; in the same way, pay television operators are obliged to transmit said content without implying an extra charge to the final consumer. The concessionaires declared with substantial power or as preponderant economic agents in any of the markets will not benefit from the rule of free content.

- Establish the bidding process for two new public television channels, in which companies that accumulated concessions to provide broadcasting services of 12MHz or more in any geographic coverage area will not be able to participate.
- Specify that the Federal Judicial Council must establish collegiate circuit courts and district courts specialized in economic competition, broadcasting and telecommunications.
- To establish that the Federal Electricity Commission will fully assign to Telecomunicaciones de México (Telecomm, is in charge of controlling and operating telegraphic, satellite, radio-maritime services and offers basic financial services) its concession to install and operate a public telecommunications network and will transfer all necessary resources and equipment for the operation of said concession, with the exception of optical fiber, rights of roads, towers, poles, buildings and facilities.
- To compel the Federal Executive, through its competent agencies, to install a shared network (Red Compartida) that promotes effective access to broadband communication, and may contemplate public or private investment. To that end, the proposed was to reform articles 6, 7, 27, 28, 73, 78 and 94 of the Constitution.

Policy response

After the legislative process, on June 11, 2013, the Official Gazette of the Federation (DOF by its acronym in Spanish) published 'the Executive Order reforming and supplementing various provisions of Articles 6, 7, 27, 28, 73, 78, 94 and 105 of the Mexican Political Constitution On telecommunications matters', which adopted six guiding principles:

- Issuance of a new legal framework
- Specific rules for effective competition
- Strengthening of the institutions involved in the telecommunications and broadcasting sectors
- Specific objectives for universal coverage of services
- Deployment of infrastructure
- Expansion of the fundamental rights of freedom of expression, access to information and information and communication technologies

It is important to highlight that, from the aforementioned constitutional reform, the article 6 of the Constitution establishes that the government will guarantee the right of access to information and communication technologies, as well as to broadcasting and telecommunications services, including broadband and Internet, so, the government will establish conditions of effective competition in the provision of such services. In that sense, among the bases and principles that the government should follow, are:

- The government will guarantee the integration of the population to the information and knowledge society, through a universal digital inclusion policy with annual and sexennial goals.
- The telecommunications are public services of general interest, so the government will guarantee that they are provided in conditions of competition, quality, plurality,

universal coverage, interconnection, convergence, continuity, free access and without arbitrary interference.

- Broadcasting is a public service of general interest, so the government will ensure its provision in conditions of competition and quality and with the benefits of culture to the entire population, preserving the plurality and veracity of the information.

In addition, with the amendment to article 28 of the Constitution, IFT was created as an autonomous constitutional body, with its own legal personality and assets, whose purpose is the efficient development of broadcasting and telecommunications in accordance with the provisions of the Constitution, as well as in the terms established by the laws.

Derived from this reform, several constitutional goals were established, which are indicated below:

- Publication of the rules to bidding new broadcasting television frequencies concessions, grouping at least two new television channels with economy-wide coverage.
- Determination of preponderant economic agents in the telecommunications and broadcasting sectors, as well as regulation.
- Establishment of measures that allow the effective disaggregation of the local network of the preponderant economic agent in telecommunications.
- Review of the current concession titles, in order to verify compliance with their terms, conditions and modalities.
- Creation of the Concessions Public Registry
- Issuance of the IFT's Organic Statute.
- Issuance of guidelines of a general nature to provide additional services or to move to a single concession model for the preponderant economic agents.
- Implementation of digital switchover throughout the economy.
- Issue the guidelines and agreements for Telecomunicaciones de México to have the authority and resources to promote access to broadband services, plan, and design and execute the construction and growth of a robust telecommunications backbone infrastructure, as well as communication via satellite and the provision of telegraph service.
- Actions that correspond to the IFT, depending on its competence, in relation to the installation of the shared public network that guaranteed by the federal branch.
- Actions corresponding to the IFT, depending on its competence, to contribute to the objectives and goals set in the National Development Plan and other programmatic instruments, related to the telecommunications and broadcasting sectors.

On 24 March 2014, the President of Mexico sent the decree initiative for the issuance of the Federal Telecommunications and Broadcasting Law to the Congress. Later, the Federal Executive promulgated and published this initiative by in the *Official Gazette* on 4 July 2014.

This law sets out a number of diverse issues as convergent single concessions, the administration and allocation of the radio spectrum, the interconnection of networks, the substantial market power and preponderant economic agents, the sharing of the local network and the user's rights, among other concerns.

Impact

As a consequence of regulatory reform, the relevant markets in the telecommunication industry have developed positively; the penetration levels have increased in broadband markets, there are new players in the mobile market and quality of service has improved particularly the broadband speeds and data volumes. Actually, the investment in higher capacity mobile technologies and further availability of spectrum for mobile telecommunication services, including via the digital switchover, has led to an acceleration of gains. In the domestic economic context, between 2012 and 2016, prices for telecommunication services significantly decreased, leading to an important increase in subscriptions, especially in mobile markets. Over 50 million new mobile subscriptions to the mobile Internet and, from a small base, the number of people using the internet for online transactions has multiplied by a factor of four. In addition, foreign investment increased, and the telecommunication and broadcasting sectors grew faster than the overall Mexican economy. A third domestic free-to-air (FTA) television network has been introduced and plans have been announced for a fourth set of licenses to be made available and awarded on a regional basis.

From 2013 to 2014, telecommunications GDP did not show much growth and private investment in infrastructure fell. However, from 2014 to 2016, the telecommunications sector generated an investment of USD 10.35 billion. At the end of 2016, the investment grew by 73 per cent compared to 2014, while in the same period the telecommunications GDP grew by 20 per cent. The foregoing situates 2016 as a year in which the sector GDP had a remarkable development accompanied by a strong growth in investment, which represents a positive outlook for telecommunications in the short and medium term.

The level of income of the telecommunications operators as a whole in 2013 was close to USD 20 billion, for 2014, they reached USD 21.9 billion, and in 2016, they generated more than USD 22.5 billion, that is to say, a growth of close to 15 per cent between 2013 and 2016. In the second quarter of 2017, revenues amounted to USD 11.35 billion.

Before the reform, the Foreign Direct Investment (FDI) that the telecommunications sector generated was less than 1 per cent. For the year of the reform it was 5 per cent, and during 2015 it represented more than 8 per cent of the total FDI – as a result of the acquisitions made by AT&T of Iusacell and Nextel for USD 2.5 and 1.875 billion, respectively. In the second quarter of 2017 the investment balance remains positive.

As for fixed telephony service, América Móvil (Telmex) has lost 8 percentage points of its market share, going from 72 per cent to 64 per cent. In terms of mobile telephony service, although América Móvil (Telcel) has lost 4 percentage points in its participation, the entry of AT&T, as well as the birth of 13 mobile virtual operators (MVNOs), has generated greater competition in this market, which has had a significant impact on the decrease in prices.

On the other hand, mobile broadband services have registered the highest growth, going from 27.4 to 76.9 million Internet lines through mobile phones. At the same time, América Móvil

(Telcel) has lost 11 percentage points of its participation, going from 82 per cent to 71 per cent during the period analyzed.

Challenges and lessons

The Report on Relevant Actions of the Ministry of Communications and Transportation (SCT)[10], corresponding to the period from January 2013 to December 2017, indicates that the benefits of the Telecommunications Reform are: 1) increased of connectivity and internet users; 2) price reduction in telecommunications services; 3) opening of the sector and new investments; 4) economic dynamism in the telecommunications sector and e) higher quality of telecommunications services.

Likewise, the OECD Study on Telecommunications Regulation Policies in Mexico (2017)[11] states that, since the reform in the telecommunications sector, there are new entrants in the market, there is a substantial reduction of the prices and an increment of access, particularly in mobile broadband subscriptions and data usage. Also, the prices of mobile service baskets have decreased between 61 per cent and 75 per cent since the reform. As a reference, the same study generates a table that indicates the status of the implementation of the 2012 OECD recommendations (Annex I).

In addition, the quality of the service (QoS) has improved in terms of the speed of broadband services. In addition, foreign investment has increased, and the telecommunications and broadcasting sectors have grown faster than the Mexican economy in general. As for the broadcasting sector, Mexico has completed the transition to digital terrestrial television and has already authorized concessions for a third domestic of the open TV channels, which began broadcasting in 2016.

Finally, the OECD determined a series of recommendations aimed at accessing high quality telecommunication and broadcasting services. These recommendations are divided into the following areas (for more information please see Annex II):

Recommendations to promote competition

- The measures proposed by the IFT in its preponderance review of telecommunication services are found to be balanced and proportionate. Access seekers need to have elements such as local loops and leased lines available to them, together with the use of an effective electronic management system.
- If market developments and the new preponderant measures do not increase competition over time, research and consultation should be carried out on options such as functional and structural separation of the preponderant agent as a last resort.

---

[10] Informe sobre Acciones relevantes de la Secretaría de Comunicaciones y Transportes (SCT), correspondiente al período de enero de 2013 a diciembre de 2017. Available at [http://www.sct.gob.mx/fileadmin/oficialia-mayor/acciones-relevantes-SCT.pdf]

[11] OECD. (2017). Estudio de la OCDE sobre telecomunicaciones y radiodifusión en México 2017. Retrieved fromhttp://www.ift.org.mx/sites/default/files/estudio_de_la_ocde_sobre_telecomuncaciones_y_radiodifusion_en_mexico_2017.pdf

- The IFT should assess the entry of Telmex into pay TV as soon as possible, following the successful implementation of its functional separation.
- Transitory Article 9 of the Federal Telecommunication and Broadcasting Law provides a fast track for non-preponderant agents to perform concentrations; this possibility should be eliminated.

Recommendations to improve market conditions

- Continue to lower investment barriers in the telecommunication and broadcasting sectors: 1) abolish the remaining legal restrictions on foreign direct investment in the area of broadcasting) revise the reserved capacity requirements for satellites.
- Eliminate the special tax on products and services levied on telecommunication services.
- The way spectrum fees are divided between the auction fee and annual fees should be reconsidered and more analysis should be done on the fee structure to help guarantee that the auction process establishes a fair value for the use of spectrum. As a consequence, there might be a need to lower the current annual spectrum fees in future auctions to take into account the effects of these recurring fees on meeting policy objectives.

  Barriers should be reduced for infrastructure deployment at the local and municipal levels. The Ministry of Communications and Transportation (Secretaría de Comunicaciones y Transportes, SCT) should accelerate the elaboration of guidelines and co-ordination agreements for all levels of government and work with the different levels of government to implement them as soon as possible.

Recommendations for domestic policies

- The National Digital Strategy should be updated and revised, and milestones for the different elements of the strategy should be established.
- Co-operation needs to be improved between governmental entities and across the different levels of government (central, state and municipal) for the México Conectado program. Furthermore, effective monitoring mechanisms should be put in place and satellite connections reduced once the Red Compartida is deployed.
- The development of digital skills should be furthered and skill training in firms should be promoted.

Recommendations on the legal and institutional framework

- From a long-term perspective, the Constitution should retain the key principles and goals pertaining to the telecommunication and broadcasting sectors, such as digital inclusion.
- Attributions among different governmental entities in formulating and implementing digital economy policy should be better aligned. Different options exist. Skilled personnel are crucial for designing effective digital economy policies; therefore, staff should be carefully recruited.
- The attributions of the COFECE and the IFT should be very clear.
- Audio-visual content regulation could benefit from strengthening the IFT’s role, especially to guarantee the rights of children and people with disabilities. The adoption

of an approach that encourages co-regulatory and consumer empowerment mechanisms would also improve current audio-visual content.

ANNEX I[12]

Table 1.1. **State of implementation of the 2012 OECD recommendations**

Telecommunication sector	State of implementation
Ensure low barriers to entry and "contestable" telecommunication markets	
Eliminate all foreign investment restrictions/caps on fixed-line telecommunication operators in Mexico.	✓
Reform the existing concession system to a simpler class-licensing regime (except for resource scarcity restraints, i.e. spectrum).	✓
Monitor and enforce existing obligations.	✓
Simplify and encourage entry of resellers to the market (including mobile virtual network operators).	✓
Ensure that regulations and regulatory processes are transparent, non-discriminatory and applied effectively	
Reform the current legal system to prohibit courts from suspending and overturning policy/regulatory decisions systematically, and provide protection for individuals acting on behalf of a public authority.	✓
Separate responsibilities for policy formulation (ministry) from regulatory/marketing functions (regulator) (e.g. granting concession process) in order to eliminate the "double window".	✓
The Federal Commission of Telecommunications (Comisión Federal de Telecomunicaciones, COFETEL) should have greater autonomy to carry out its mandate and should have the power to enforce/revoke concessions.	✓
COFETEL should have the authority to declare significant market power and subject that company to appropriate remedies.	✓
The jurisdictions of COFETEL and the Federal Competition Commission (Comisión Federal de Competencia, COFECO) and the various other regulatory bodies should be clearly defined and co-operation should be formalised.	✓1
The regulator should have greater budgetary independence and a clearly defined and sufficient source of funding.	✓
The regulator should have the power to impose fines high enough to ensure regulatory adherence.	✓
Quality of service indicators should be published regularly.	✓
Wholesale indicators from dominant firms should be available to new entrants (e.g. access to leased lines, etc.).	✓
Establish formal public consultations and transparency procedures for COFETEL to follow to ensure increased accountability and transparency.	✓
Reform regulations to stimulate competition and eliminate regulations, except where clear evidence demonstrates that they are the best way to serve the broad public interest	
COFETEL should be authorised to regulate interconnection tariffs *ex ante* to foster competition among operators.	✓
Telmex (fixed-line incumbent) should be required to consolidate local dialling areas as determined by COFETEL.	✓
COFETEL should be authorised to declare bottlenecks and essential facilities and to establish non-discriminatory conditions to access these facilities.	✓
COFETEL should be able to undertake market reviews, declare market powers, and apply remedies as appropriate, and impose regulations to protect consumers.	✓
COFETEL should have the authority to impose a functional and structural separation of an operator that abuses its dominate power.	✓
COFETEL should set the "X factor" and administer price caps to regulate Telmex's end-user prices, including the use of "sub-caps".	✓
Only operators with significant market power should have to register their wholesale prices.	✓
Sufficient spectrum should be released to meet the growing demand for mobile broadband data service, including releasing some of the Federal Electricity Commission's (Comisión Federal de Electricidad, CFE) dark fibre. Incentives also should be put in place to promote infrastructure sharing.	✓
Modify the legal framework to promote infrastructure sharing and to remove barriers to obtain rights of way, by making governmental facilities available for mobile operators to deploy their networks and accelerating procedures to grant permits for rights of way.	Partial/in progress
The government should clarify the policy of universal service and define plans on how to effectively implement it.	Partial/in progress
The Federal Consumer Protection Agency (Procudaría Federal del Consumidor, PROFECO) and COFETEL should clarify their roles and take action to facilitate consumers to switch service providers.	✓
Broadcasting sector	
Telmex should only be allowed to provide TV services when it's subject to asymmetric regulations and is in compliance with such regulations.	✓
The government should award a third and fourth free-to-air (FTA) national TV license on a fair, non-discriminatory and neutral process.	✓2
Must-carry obligations should apply to all pay TV providers, which should be obliged to carry all terrestrial broadcasting signals. Must-offer obligations should also apply to FTA broadcasters and the conditions (e.g. price, channel bundling) should be reassessed periodically.	✓3
Ensure the transition to digital terrestrial television progresses to meet completion date of 2016.	✓
Foreign ownership restrictions on Mexican TV broadcasters should be lifted.	Partial
Cable operators should be able to obtain one national license for the whole country, instead of multiple regional ones.	✓

1. A recent judicial decision to allow both regulatory bodies to work jointly on the same case may undermine the progress made to close the "double window" between the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) and the Ministry of Communications and Transport (Secretaría de Comunicaciones y Transportes, SCT) by opening one between the IFT and COFECE.

2. A third national licence is operational and a 2017 auction process will grant the spectrum which was initially offered for the fourth national broadcasting network.

3. The IFT plans a forthcoming assessment of the guidelines and outcomes of the must-carry must-offer obligations.

[12] OECD. (2017). Estudio de la OCDE sobre telecomunicaciones y radiodifusión en México 2017. Retrieved from

ANNEX II[13]

Recommendations to promote competition
The measures proposed by the IFT in its preponderance review of telecommunication services are found to be balanced and proportionate. Access seekers need to have elements such as local loops and leased lines available to them, together with the use of an effective electronic management system.
If market developments and the new preponderant measures do not increase competition over time, research and consultation should be carried out on options such as functional and structural separation of the preponderant agent as a last resort.
The IFT should assess the entry of Telmex into pay TV as soon as possible, following the successful implementation of its functional separation.
Transitory Article 9 of the Federal Telecommunication and Broadcasting Law which provides a fast track for non-preponderant agents to concentrate, should be eliminated.
The sector definitions of the telecommunication and broadcasting sectors should be revised periodically, taking the convergence of different communication services into account.
The IFT should continue to reduce termination rates, based on a thorough assessment of competition levels in the Mexican market. This can be done gradually over time at the discretion of the IFT. With respect to Internet interconnection, the functioning of the existing Internet exchange point (IXP) should be improved. Access to the IXP should be enhanced and additional IXPs developed across Mexico.
Continue to foster the adoption of Internet Protocol version 6 (IPv6) standards throughout Mexico.
Competition and plurality in audiovisual content should be enhanced through an evidence-based assessment of the provision of audiovisual services and of the diversity of media ownership, and a clarification of must-carry must-offer rules by the IFT.
The IFT should strengthen its research into cross-ownership, production and programming agreements related to telecommunication services and broadcasting.
Substantial market power investigations could be improved by giving the Investigative Authority (Autoridad Investigadora, AI) of the IFT more time than currently allowed to conduct them and by adding to the list of factors to be considered, information on changes in market shares over time, profit margins, and the history of entry and exit in the market.
The IFT should publish the commitments merging parties make to win approval for merger and acquisition transactions.

http://www.ift.org.mx/sites/default/files/estudio_de_la_ocde_sobre_telecomuncaciones_y_radiodifusion_en_mexico_2017.pdf

[13] Internal document on the[13] OECD (2017), OECD Telecommunication and Broadcasting Review of Mexico 2017. International Affairs Bureau (IFT)

The IFT should analyze network neutrality and monitor potential breaches as well as the evolution of differential pricing (zero-rating) and specialized services.
Recommendations to improve market conditions
Continue to lower barriers to investment in the telecommunication and broadcasting sectors: 1) abolish the remaining legal restrictions on foreign direct investment in the area of broadcasting) revise the reserved capacity requirements for satellites.
Eliminate the special tax on products and services levied on telecommunication services.
The way spectrum fees are divided between the auction fee and annual fees should be reconsidered and more analysis should be done on the fee structure to help guarantee that the auction process establishes a fair value for the use of spectrum. As a consequence, there might be a need to lower the current annual spectrum fees in future auctions to take into account the effects of these recurring fees on meeting policy objectives.
Barriers should be reduced for infrastructure deployment at the local and municipal levels. The Ministry of Communications and Transport (Secretaría de Comunicaciones y Transportes, SCT) should accelerate the elaboration of guidelines and co-ordination agreements for all levels of government and work with the different levels of government to implement them as soon as possible.
Instead of providing airtime for official use, broadcasting concessionaires should pay an annual license and spectrum fees in cash.
The Federal Telecommunication and Broadcasting Law (Ley Federal de Telecomunicaciones y Radiodifusión, LFTR) should be amended to allow for a more flexible imposition of sanctions, taking into account the principle of proportionality, particularly regarding consumer protection regulations. The LFTR should also be reformed to allow the IFT to impose sanctions on any person or entity violating the provisions set out by the IFT in the exercise of its powers.
Federal Telecommunication and Broadcasting Law (Ley Federal de Telecomunicaciones y Radiodifusión, LFTR) rules requiring registration of adhesion contracts should be reoriented towards enabling the Federal Consumer Protection Agency (Procudaría Federal del Consumidor, PROFECO) to require operators and services to provide contractual information in a format useful for consumers, such as through use of standard and simplified contracts.

The elements that the Ministry of Communications and Transport (Secretaría de Comunicaciones y Transportes, SCT) should include in its technical opinion to the IFT for granting concessions should be clarified. Accordingly, the SCT should be able to request relevant information from other ministries and authorities to inform its technical opinions.
Recommendations for domestic policies
The National Digital Strategy should be updated and revised, and milestones for the different elements of the strategy should be established.
Promoting private sector involvement for the Red Troncal and México Conectado programs can help overcome budget constraints and resolve other current implementation challenges.
Co-operation needs to be improved between governmental entities and across the different levels of government (central, state and municipal) for the México Conectado program. Furthermore, effective monitoring mechanisms should be put in place and satellite connections reduced once the Red Compartida is deployed. For the @prende 2.0 program, local communities and local levels of government should become involved and the strategy should be revised with regards to devices in the coming years. A close assessment should be undertaken of the effects of the program as outlined in its monitoring and evaluation section.
The development of digital skills should be furthered through the Puntos México Conectado program and skill training in firms should be promoted.
The successful deployment of the Red Compartida needs to be a priority for Mexico. Mobile network operators and mobile virtual network operators must have an incentive to use the network via appealing access offers that give them maximum freedom to innovate and design their service offers to end users. Potential obstacles such as access to international mobile roaming agreements need to be addressed from the beginning. Effective oversight by the Organism for the Promotion of Investment in Telecommunications (Organismo Promotor de Inversiones en Telecomunicaciones, PROMTEL) is essential to ensure that milestones are met. The 2.5 GHz auction should be executed as soon as possible.
A new social coverage scheme should be adopted that uses market mechanisms for achieving coverage obligations. The successful bidder should be required to indicate how it will monitor service quality, and these data should be made public for open review once available.
The demand for the Bicentario and Morelos 3 satellites should be assessed and their use should be revised.

A more flexible framework for the funding of public broadcasters should be established to enable them to meet their mandate in a rapidly changing environment.
Mexico should continue to improve the collection and analysis of statistical information in the broadcasting sector and with respect to connectivity coverage maps and the use of applications.
Recommendations on the legal and institutional framework
From a long-term perspective, the Constitution should retain the key principles and goals pertaining to the telecommunication and broadcasting sectors, such as digital inclusion. The more detailed prescriptions, especially those included in transitory articles, should be removed and, as appropriate, otherwise addressed, once their initial purpose has been achieved, in order to provide more flexibility to the different institutions to effectively perform their mandate in light of technological change.
While it is crucial that the general rules, acts or omissions of the IFT and the Federal Economic Competition Commission (Comisión Federal de Competencia Económica, COFECE) may only be challenged by indirect amparo trials not subject to suspension, the exception rule for fine and divestiture decisions for COFECE should also apply to the IFT.
Attributions among different governmental entities in formulating and implementing digital economy policy should be better aligned. Different options exist. Skilled personnel are crucial for designing effective digital economy policies; therefore staff should be carefully recruited.
The attributions of the Federal Economic Competition Commission (Comisión Federal de Competencia Económica, COFECE) and the IFT should be very clear. Parallel procedures should be avoided as should reopening a double window.
There should be a clearer definition of roles between the Federal Consumer Protection Agency (Procuraduría Federal del Consumidor, PROFECO) and the IFT on the operators' compliance regarding the provision of advertising, which should be entrusted to PROFECO. PROFECO could benefit from having a head with a fixed-term appointment.
Audiovisual content regulation could benefit from strengthening the IFT's role, especially to guarantee the rights of children and people with disabilities. The adoption of an approach that encourages co-regulatory and consumer empowerment mechanisms would also improve current audiovisual content.
The specialized courts would benefit from a modicum of in-house technical support. The budget assigned to the courts should allow judges and their staff to receive specific training in their areas of competence. The terms of appointment for the specialized judges should be extended to at least five years, and their appointments should be made in a manner that ensures continuity of expertise.
The number of Board members of the IFT and the Federal Economic Competition Commission (Comisión Federal de Competencia Económica, COFECE) could be reduced, as should the number of members on the IFT's Advisory Council.

The responsibilities of the IFT Board could be reviewed and the board should be able to delegate some of its responsibilities to the IFT's internal departments. The obligation to electronically record meetings between regulated entities and IFT commissioners could be simplified so as to retain only the publication of the dates of the meeting and the regulated entities with whom the commissioners are meeting.

NEW ZEALAND: AUCKLAND TRANSPORT ALIGNMENT PROJECT

Introduction

New Zealand is a developed economy with a population of 4.7 million people. The main city is Auckland which has a population of 1.37 million (30 per cent of the population). Given that Auckland is the major urban area in New Zealand, Auckland's economic success is important to the domestic economy. A key element of Auckland's success is ensuring that Auckland has a suitable land transport system.

New Zealand has experienced high levels of population growth over recent years, with the majority of these migrants going into Auckland. This has placed pressure on Auckland's infrastructure, including its transport system. It is expected that the population of Auckland will continue to grow rapidly over coming years, creating more need for investment in the transport system.

Auckland's transport system is jointly funded by the central government and the Auckland Council. As joint transport investors, the government and council have a shared interest in ensuring value for money from Auckland transport investments. To this end, the government and Auckland Council have agreed on the need to develop an agreed strategic approach to transport investment over the long term. This challenge gave rise to the Auckland Transport Alignment Project ('ATAP'), established in late 2015.

Pre-reform situation

Prior to the ATAP, transport funding decisions in Auckland were guided by two plans, the 'Basic Transport Network' and the 'Auckland Plan Transport Network' (APTN), which were developed by the Auckland Council and consulted on in 2015. The APTN identified an NZD 300 million per year funding shortfall if the program set out in the plan were to be implemented.

Prior to agreeing to additional funding or funding tools for Auckland transport, the central government wanted to be confident that investment in Auckland's transport system would address the regions transport challenges and provide value for money.

The ATAP project was therefore established to improve alignment over the way Auckland's transport system should develop over the next 30 years, and to test whether better returns from transport investment could be achieved than from the APTN, particularly in relation to the following objectives:

- To support economic growth and increased productivity by ensuring that **access to employment/labor improves** relative to current levels as Auckland's population grows.
- To **improve congestion results**, relative to predicted levels, in particular travel times and reliability, in the peak period and to ensure congestion does not become widespread during working hours.
- To **improve public transport's mode share**, relative to predicted results, where it will address congestion.

- To ensure any increases in the financial costs of using the transport system **deliver net benefits to users** of the system.

The agencies involved were the Ministry of Transport, Auckland Council, Auckland Transport, the New Zealand Transport Agency, the Treasury and the State Services Commission. The terms of reference for ATAP provided for three deliverables. The first, the ATAP Foundation Report, was published in February 2016 and provided an overview of the context (including the impact of technology), assumptions, problem definition, desired outcomes and measures. The second, the Interim Report, was published in June 2016 and provided preliminary conclusions, including the testing and evaluation of broad intervention packages. It also set out an emerging strategic approach and sought feedback from the parties to inform the Final Report. The third and Final Report, Auckland Transport Alignment Project Recommended Strategic Approach, was completed and submitted to Ministers and the Mayor on 31 August 2016.

Policy response

The ATAP sets out a strategic approach, agreed between Central and local Government, for the development of Auckland's transport system over the next 30 years that aims to improve returns from transport investment over the medium and long-term. A conclusion of the work is that, while changing the mix of investment would deliver improvements in some areas, it could not deliver a step change in performance and by itself would not result in transport investment keeping pace with projected growth in demand. A broader range of tools was therefore needed and hence the ATAP Final Report therefore recommended an ongoing strategic approach containing three integrated elements:

- Making better use of existing networks
- Targeting investment to the most significant challenges
- Maximizing new opportunities to influence travel demand, including the introduction of smarter transport pricing

The key difference between the APTN program and the recommended ATAP strategic approach is the proposed introduction of measures to influence transport demand, in particular the introduction of smarter transport pricing. The ATAP assumes that demand pricing will be fully implemented by 2036, although in practice a phased implementation in advance of this would potentially be possible.

The ATAP Final Report included an indicative package of investments that illustrated the type and quantum of investment likely to be required to deliver this strategic approach. The indicative package included all operational and capital expenditure by the NZTA, Auckland Transport and KiwiRail in Auckland over the next 10 years. The package in the Final Report was a mixture of committed and uncommitted investments and totaled around NZD 24 billion over the 2018–2028 period and NZD 84 billion over 30 years (at 2016 prices).

A new government was elected in late 2017. Further, since the ATAP Final Report was published expenditure forecasts were updated in light of population growth. The new government and Auckland Council have consequently jointly updated the ATAP plan in order to align the priorities of the new government with the existing priorities of Auckland Council. The updated ATAP proposes to invest NZD 28 billion in Auckland transport across the next

10 years and establishes a list of future priorities that will be brought forward if additional funding becomes available. This is now guiding the development of 2018 statutory transport planning and funding documents.[14]

It is important to note that the ATAP package is not an investment program and individual projects will still need to go through the required planning and funding processes to proceed. The timing and sequencing of projects assumed in the indicative program will also change as projects and growth continues. For example, some projects may need to be brought forward to meet demand.

The next steps for Auckland Transport are to work with the relevant agencies to implement the recommendations, progress business cases for high priority interventions identified in the ATAP report, and work through how transport funding processes can best reflect the benefits of enabling growth. These changes are expected to be seen through the proposed investment program for inclusion in the 2018–2028 Regional Long-Term plan.

Impact

A key goal of the ATAP was to improve alignment between central and local government in terms of the outcomes sought from investment in Auckland's transport system. The process was a major step forward in terms of providing agreement on a recommended strategic approach and priorities for investment between all of the agencies.

Challenges and lessons

A key challenge going forward will be maintaining alignment between the agencies so that the recommendations made by ATAP can be implemented as quickly and effectively as possible. Increases in population growth above what was originally expected also mean that the initial projections for funding requirements needed to be revised up. The plan therefore needs to be flexible enough to adapt to changing priorities over time.

Links

Informs the Background section above: Ministry of Transport, New Zealand. (2016). Auckland Transport Alignment Project: Foundation Report. Retrieved from https://www.transport.govt.nz/assets/Uploads/Land/Documents/Auckland-Transport-Alignment-Project-Foundation-Report.pdf.

Informs the ATAP Objectives section above. Ministry of Transport, New Zealand. (2017). Auckland Transport Alignment Project: Update to reflect faster growth. Retrieved from https://www.transport.govt.nz/assets/Uploads/Land/Documents/Auckland-Transport-Alignment-Project-Update-to-reflect-faster-growth-August-2017.pdf.

Informs most of the information above: Auckland Transport. (2016). Retrieved from https://at.govt.nz/media/1971357/item-115-atapfinal.pdf.

[14] Including the including the Government Policy Statement, Auckland Plan, National Land Transport Programme, Regional Land Transport Plan (RLTP), and the Long-term Plan.

NEW ZEALAND: BROADBAND ROLL OUT

Introduction

The goal of successive governments in New Zealand has been to improve access to broadband services in both absolute and relative terms. This culminated in the roll-out of the Ultra-Fast Broadband (UFB) program, a government sponsored project to achieve over 86 per cent fiber-to-the-home (FTTH) coverage by the end of 2022. The UFB program is currently at 68 per cent completion.

The UFB program includes a government contribution of almost NZD 1.8 billion, most of which will be returned to government, in nominal terms, by the time the project is completed. It also includes an estimated NZD 5.7 billion of private sector investment.

Once the UFB program is complete, New Zealand should be in the top five economies in the OECD for the proportion of the population that can access FTTH.

Pre-reform situation

In the early 2000s, Telecom was a vertically integrated telecommunications provider with a monopoly, or near monopoly position in some services and regions. It was a publicly listed company and successor to the state-owned Post Office (which has included post, telephony and banking).

There were concerns that broadband service offerings to New Zealanders lagged behind those of economies New Zealand regarded as peers. There were also concerns about competition and the level of investment in the sector, particularly around the ability of third parties to access the monopoly copper network and the rate of investment in broadband infrastructure.

The Telecommunications Act 2001 signaled a move from generic competition legislation to sector specific regulation, however there was a prolonged debate about whether the move was having any effect.

In 2006, the government mandated local loop unbundling and the operational separation of Telecom into retail, wholesale and network arms, with third parties able to access Telecom's wholesale services on the same terms as Telecom's retail arm.

Despite this change, there was continued debate about whether broadband infrastructure was being upgraded at the appropriate rate, particularly around whether Telecom had sufficient incentives to invest.

Policy response

In 2009 the government launched the UFB program, committing an initial NZD 1.345 billion to subsidize the roll-out of a FTTH network to 75 per cent of the population.

Build-own-operate contracts were offered on a regional basis. A condition of participation in the UFB initiative was that any company partnering with the government to provide wholesale UFB was not allowed to also provide retail telecommunications services.

The government entered into contracts with four companies to deliver UFB: three regional electricity lines companies and Telecom. As a condition of participating in the program, Telecom agreed to split into two companies; Chorus, a wholesaler covering copper networks and local loops; and Spark, a fixed-line retailer and mobile network operator.

The initial target of the program was for 75 per cent of the population to have access to FTTH. Since then, the target has increased to over 86 per cent with an additional NZD 437 million of government funding, including funds 'recycled' from the first phase of the program.

Rural areas have been provided broadband access (via xDSL or wireless technology) through a separate initiative, the Rural Broadband Initiative, that grant-funds broadband infrastructure in rural areas where UFB is not commercially viable.

Impact

The impact of the UFB program is that over 86 per cent of the population will be able to access FTTH by the end of 2022. Currently, 41.3 per cent of households with FTTH access are connected to the fiber network.

According to the most recent AKAMAI State of the Internet Connectivity Report (Q1 2017), New Zealand has an average internet connection speed of 14.7 Mbps, placing it 27th in the world.

Challenges and lessons

- Challenge: increasing both competition and capital investment in a sector at the same time. Previous legislative and structural changes increased retail competition, however did not create incentives for infrastructure investment.
- Lesson: government co-investment was required to incentivize private sector investment in broadband infrastructure.
- Challenge: getting a monopoly incumbent to offer good commercial terms to a government-subsidized project.
- Lessons: Commercial offerings needed to be structured to allow participation by new entrants. In particular it was important to ensure contract terms allocated risk to the appropriate party. In the case of UFB, contracts were divided into regions so that local electricity distribution network companies could participate, and the contracts were structured so that government took on the uptake risk. Partnering companies took on the construction and ongoing operational risk. It was necessary to bring in appropriate commercial skills to work closely with the policy team to ensure alignment of policy objectives with commercial offerings.

PAPUA NEW GUINEA: KUMUL REFORM AGENDA AND STATE-OWNED ENTERPRISE POLICIES

This case study discusses the recent reform on the management of the government's investments in the state-owned enterprises (SOEs) sector known as the Kumul Reform Agenda. It discusses how it has contributed to improving infrastructures developments. It also briefly discusses other SOE reform policies that were developed that would have contributed equally to improving operations/management of SOEs if implemented.

The case study will draw on the challenges faced whilst implementing the reform policies and also highlight lessons learned during the process. These would form the basis of future policy discussion, to develop or improve on in infrastructure service delivery in the economy.

Kumul Reform Agenda

The PNG Government has undertaken a major structural reform of its SOE portfolio through the Kumul Consolidations Reform Agenda. The Kumul reform was implemented in 2015 to address inefficiencies in the management of the government's commercial investments with SOEs.

Nearly all the government's commercial investments were formerly managed under the Independent Public Business Corporation (IPBC) of Papua New Guinea, which was a government owned corporation set up in 2002 under its own legislation (IPBC Act 2002).

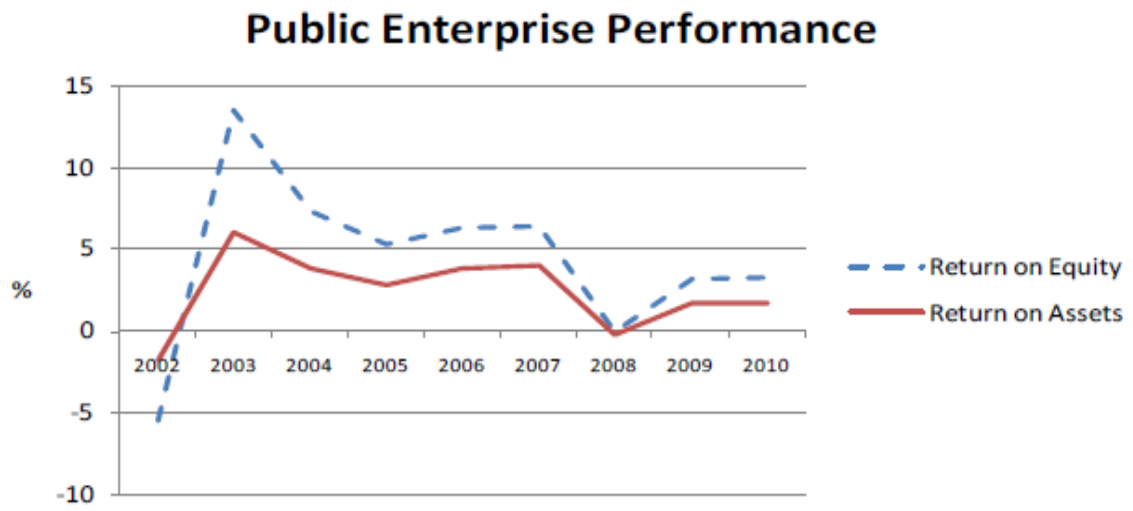
The IPBC managed all government's investments in the traditional SOEs together with the government's interests in the petroleum sector. These were all held and managed in a trust called the General Business Trust. The IPBC acted as the trustee of the GBT. The IPBC guided by its legislation, subject to Cabinet's approval, could also undertake certain investment activities, including the funding of high impact projects.

Prior to 2015, the efficient management of the government's commercial investments in SOEs have been an area of concern. The government requires effective and efficient management of its SOE's as they are directly involved in the provision of essential infrastructure services such as provision of telecommunication service, transport, electricity, water, finance and postal logistic services.

The government realized the importance of building capacity in the SOEs and therefore, has invested significantly in SOEs through direct capital funding. However, SOE's performance (productivity level) has remained relatively low despite capital contributions by the Government. Most SOEs are natural monopolies in their own sectors like power/electricity and water leading to no or little competition while some SOE services are regulated as well as with little competition that has created less incentive for SOEs to improve performances.[15]

[15] Note: Telecommunications - Communications monopoly effectively ended in 2007 with the offering of mobile phone/gateway licenses through ICCC & NICTA. The introduction of well financed and capable competitors changed the market from a publicly owned communications monopoly to a privately owned one.

Figure 2: SOE Performance 2002 - 2010



Source: ADB (Fig 29. Public Enterprise Performance) – PNG BUDGET Volume 1, 2014

The government, intending to improve the management of its SOEs, led to restructuring its SOE portfolio holding structure. Subsequent consultations and legislative changes were made to effect the new Kumul reform structure.

Building capacity

The government's assets underwent significant structural reorganization through the Kumul Reform Agenda. The Kumul reform has seen the government's commercial investment and assets placed in trust under three Kumul entities:

- **Kumul Consolidated Holdings (KCH)** is to oversee the government's infrastructure and service provision through its SOEs. KCH is the holding entity of the General Business Trust, which holds the government-owned assets formerly managed by the IPBC;
- **Kumul Minerals Holdings (KMH)** to hold all government's interests in mining projects including those previously held by Petromin (SOE); and
- **Kumul Petroleum Holdings (KPH)** to hold the government's interests in oil and gas projects including the PNG LNG project. It also holds those assets formerly held by an SOE – the National Petroleum Company of PNG (NPCP).

The Kumul structure was anticipated to enable a governance regime that applies corporate principles to the management of the government's investments. The Kumul reforms were intended to improve synergy, coordination and efficiency in the government's participation in commercial activities. This included the aggregation of government companies and interest under the KCH, KMH and KPH.

The Kumul entities are guided by their own governing legislations which outline their responsibilities and roles. They operate independently in managing government investments, delivering high impact projects and providing budget support to the government through dividend payments.

There are various capital infrastructure projects that the Kumuls are progressing throughout the economy currently. For instance, KCH is undertaking the implementation of the Port Moresby Sewerage Upgrade Project (POMSSUP) – upgrading of the coastal sewerage system to improve health and hygiene for the people, infrastructure development in the port sectors, hydro power project discussions – for sustainable power sources for the economy and many other impact projects that will contribute to the betterment of the people. The infrastructure development projects are done in line with the overall policy direction of the government.

Other SOE reform policies to support the Kumul Agenda

Other policy initiatives were developed by the government in its attempt to contribute to improving SOE performances include the Dividend Policy passed in 2015 and the State Guarantee Policy.

On-Lending Policy

The On-Lending policy promotes transparency and resource efficiency by on-lending to government agencies. Basically, through various commercial lending arrangements, the government receives a loan from a financial institution/s and is responsible for making repayments to the financial institution. The government then passes on the loan principal to a government agency or SOE which in turn repays the principle to the government.

The on-lending arrangement builds capacity in government agencies to be able to access financing on favorable terms from the government, to deliver high infrastructure projects in the county.

There are currently a number of on-lending agreements in place between the government and other government entities. These arrangements are on the financing of priority impact infrastructure projects in the economy. One of this high impact project is the Lae Tidal Basin Project undertaken by KCH and PNG Ports Corporation. The project has enhanced the port infrastructure capacity for the Lae Port. As the port sector in general is a vital link between the Papua New Guinean economy and the rest of the world, with more than 80 per cent of Papua New Guinea's exports shipped through this port. The Lae Tidal Basin project will contribute significantly to improving trade capacity and enhance development of the Papua New Guinean economy.

These policies were specific reforms on SOEs to encourage efficiency in the delivery of services and improve profitability of SOEs.

Challenges and lessons learned

The government's Kumul reforms have not addressed all the structural reform issues associated with the operations and management of SOEs. There needs to be more policy dialogue and better coordination of the existing SOE reform policies.

The government needs to implement other reform policies such as the Community Service Obligation (CSO) and Public Private Partnership Policy to complement its Kumul reform objectives and deliver infrastructure and services efficiently.

The CSO Policy, which was developed and endorsed in 2013 to enhance SOE financial performance needs to be implemented. This would allow SOEs to offer services which would be otherwise commercially unviable; the government subsidizes the cost of providing the CSO services.

The government could also embrace the PPP Policy to pursue most of the big infrastructure projects that KCH is currently undertaking. This policy would ease the government of fiscal pressure and transfer most of the cost and risks to the private sector.

Furthermore, reforms to introduce a National Procurement Policy would streamline procurement planning process and framework to enable efficiency and improve service delivery to the people.

Going forward

In general, SOEs performance can only be improved through better structural reforms on corporate governance and management. Better and improved planning and monitoring on the Government's investment performance and through increase capacity to be able to efficiently and effectively deliver services.

The government would achieve better outcomes in pursuit of infrastructural developments if more SOE reform policies such as CSO and PPP would be implemented alongside the new Kumul structure. The effective implementation of these policies continues to be a challenge. However, efforts are still being made to progress the SOE reforms.

THE RUSSIAN FEDERATION: PPP REFORM FOR INFRASTRUCTURE PROJECTS

Introduction

The Russian economy has exited recession and grew by 1.5 per cent in 2017. Both private consumption and investment rose by more than 3 per cent, while export growth exceeded 5 per cent. Import demand increased by 17 per cent, thus making a strong contribution to growth in Russia's main trading partners. Going forward, the key preconditions for stronger growth are stable, rule-based macroeconomic framework and reforms to boost potential GDP and inclusiveness. Concerning fiscal policy, gradual fiscal consolidation (federal budget deficit is projected to fall to 0.8 per cent of GDP by 2020 compared to 1.4 per cent of GDP in 2017) will ensure that public debt stays at low level and that there are no crowding-out effects for private investment. The fiscal rule, which ties public expenditures to revenues based on a conservative assumption for oil prices (USD 40/barrel), results in rebuilding of fiscal buffers. It also has an additional benefit of lowering exchange rate volatility, contributing to reducing uncertainty for exporters and importers. Concerning monetary policy, the Bank of Russia's inflation targeting regime succeeded in lowering inflation below 4 per cent in 2017 and in gradual reduction of inflation expectations. Given the absence of price pressures from fiscal policies, there is space for continued gradual monetary easing, which will have positive effects on investment. High resilience to possible external shocks is ensured by adequate reserves, positive net foreign assets position and floating exchange rate regime.

As for state of infrastructure, government spending on this sector amounted to RUB 1.6 trillion (about USD 25.3 billion) in 2017, which makes about 16 per cent of total budgetary expenditures. In 2018 it is expected to increase the pace of road construction (from 326km in 2017 to 982km in 2018), ports capacities (from 722 million tons in 2016 to 966 million tons in 2021), export of transport services (from USD 14.5 billion in 2016 to USD 19 billion in 2021). It is anticipated that these objectives will be reached by using mainly concessions and PPP agreements.

Pre-reform situation

Until recently the Federal Law No. 115-FZ 'On Concession Agreements' dated 21 July 2005 (the 'Concession Law') was the main legislative act in Russia governing the procedure for the implementation of public-private partnership (PPP) projects at the federal level. However, concession legislation limits the structuring of PPP projects to a model, where the right of ownership of a facility remains with the public authority.

Over the past 15 years most Russian regions adopted their own regional PPP laws to provide options for implementing PPP projects that were based on private ownership of the relevant infrastructure objects. The regional authorities filled in the legislative gap that existed at the federal level as the federal legislation at the time did not provide for infrastructure objects to be held in private ownership in the context of PPP projects. As a result, it was difficult to use many common international PPP models, such as build-own-operate (BOO) and build-own-operate-transfer (BOOT), without the adoption of a regional legislation that allows private

ownership of infrastructure objects. The most notable example of a regional PPP law was the St. Petersburg PPP law, which was adopted in 2006.

Policy response

On 1 January 2016 the Federal Law No. 224-FZ 'On Public – Private Partnership, Municipal – Private Partnership in the Russian Federation and Amending Certain Legislative Acts of the Russian Federation' (the 'PPP Law') entered into force. The PPP Law will coexist with the current concession legislation, creating the legal framework for the use of PPP forms (models) that also allow transferring the ownership of a facility to an investor (a project company). This will provide the possibility for market participants to choose the most beneficial form for the implementation of a PPP project and, consequently, increase the number of such projects implemented on the market.

Pursuant to the PPP Law a public – private partnership agreement is defined as a civil law agreement concluded between the public partner and the private partner for the period of no less than three years based on the principles of resource consolidation and risk allocation between the parties to the agreement (the 'PPP Agreement'). Under the law only a legal entity established under the laws of Russia may become a private partner. That said, the law, however, does not impose any restriction in relation to foreign shareholding of a private partner.

Under a PPP agreement the private partner must (re-)construct an infrastructure object, fully or partially finance such (re-)construction, as well as operate and/or maintain the object. The private partner may also be required to prepare the design documentation, and fully or partially finance the operation and/or maintenance of the object.

The law contains an exhaustive list of infrastructure objects that may form the subject of a PPP agreement. This list, among others, includes private roads, bridges, roadside utilities, public transportation (excluding metros), railways, pipelines, sea and river ports, airports, electricity generation plants, public health facilities and social infrastructure. Any infrastructure that cannot be held in private ownership under the Russian law is excluded from the scope of the new Law. Such infrastructure objects may only be subject to a concession agreement.

Impact

The adoption of the new law has become a significant milestone in the development of the legal regulation of the Russian PPP sector. The law is aimed at attracting private investment in Russian infrastructure (which is already existing under the Law on Concession Agreements) and provides investors and financial lenders with PPP models and security instruments that are commonly used in international best practices.

In 2016, when the law entered into force, the number of PPP projects in Russia surged from 873 (2015) to 2,183. Private investments in PPP projects also increased from RUB 408 billion in 2015 (about USD 6.5 million) to RUB 1.3 trillion (about USD 20.6 billion) in 2016.

Challenges and lessons

The main challenge was that the adoption of the new law has created certain legal difficulties for investors with respect to the regional PPP laws and the PPP projects that were implemented on the basis of such regional laws. For example, large projects in Saint Petersburg, such as

Pulkovo Airport and Western High-Speed Diameter, are currently implemented with the participation of public banks, which the new law does not consider as a PPP project.

In order to manage this challenge, the existing regional PPP laws will have to be brought in line with the provisions of the federal law by 1 January 2025. Otherwise, such regional laws will only be effective if they do not contradict the new federal law. Also, the law states that PPP agreements signed under the regional PPP laws before 2016 remain in force as signed until their expiration. All of these clarifications and exemptions are in place in order to ensure that the projects which were signed under regional laws will be implemented without any legislative obstacles.

Going forward

As it is seen from the results of two first years of the new PPP Law's implementation, the number of the PPP projects increased 2.5 times and the prospects of further growth look rather optimistic. At the moment there are 2,980 projects registered in the common PPP projects database. The majority of projects are implemented in electric and public utilities (81.51 per cent) that are followed by social infrastructure (12.35 per cent) and transportation (2.92 per cent). Other spheres comprise 3.22 per cent. Moreover, the government continues to establish special institutes to promote and support PPP in infrastructure, such as the federal platform to support the PPP projects in Russia. The platform provides investors with the up-to-date information on the recent developments of PPP in Russia and supports the application and implementation of the PPP infrastructure projects. The platform is being maintained by the National PPP Center with support of the Ministry of Economic development of the Russian Federation. Moreover, in March 2018 Russia has endorsed one of the biggest planning strategies of the infrastructural development structural reforms, that involves 16 aspects and instrument of infrastructure development, including better PPP implementation, called 'The Roadmap on the PPP instruments development', which should create more favorable environment for private sector investment into infrastructure in Russia.

VIET NAM: REFORM IN TELECOMMUNICATION SECTOR[16][17]

Introduction

The services sector has retained its importance in Viet Nam's economy, despite different pattern of growth in 2000–2006 and 2007–2017. During 2000–2006, the services sector's growth has been robust, averaging at 7.18 per cent per annum. Due to relatively slower growth compared to overall GDP, the share of the services sector in GDP fell from 38.73 per cent in 2000 to 38.06 per cent in 2006. Meanwhile, the share of the services sector in total employment went up to 25.6 per cent in 2006 from 21.8 per cent in 2000. Labor productivity in services sector increased on average by 8.2 per cent per annum during 2000–2006.

After the WTO accession in 2007, Viet Nam's economy exhibited relatively slower growth due to global downturn and domestic restructuring attempts. Still, the decrease of the services sector's share of GDP growth was significantly smaller compared to other sectors. On average, the growth of the services sector share of GDP reached 5.61 per cent per annum during 2007–2017. The share of services in total employment rose from 28.2 per cent in 2007 to 33.4 per cent in 2014.

Continuous growth of the services sector since 2000 was driven by series of reforms in Viet Nam. First, the legal framework was gradually improved towards facilitating private business activities in general and private provision of services in particular. Specifically, the Common Investment Law and Unified Enterprise Law were issued in 2005 to establish a framework for more equal regulatory treatment over business and investment activities, irrespective of the ownership form. In 2014, both of these laws were amended again, aiming to realize 'full freedom of doing business' for the business entities, unless there are prohibitions or conditions imposed by the Government.

Second, Viet Nam equitized a number of state-owned enterprises since early 2000. It should be noted that many of the equitized enterprises were dominant firms or monopoly in key services areas such as distribution, telecommunication, banking, etc.

Third, competition policy was improved and enforced more effectively. In various sectors, such as telecommunication, post, financial services, etc., the competition between state-owned services providers and private ones were gradually nurtured and protected.

Finally, Viet Nam actively participated in a number of free trade agreements (FTAs), which both opened up the opportunities for services and incorporated liberalization of the services sector. The first important arrangement was Viet Nam–US bilateral trade agreement – signed in 2000, in effect since 2001. Upon WTO accession, Viet Nam has committed to open market to 11 services sectors, or 110 subsectors out of 155 subsectors according to the WTO's services classification.

---

[16] Lee, R.C. (2011), Telecommunications in Viet Nam. Report prepared for APEC SOM2 and Related Meetings in 2011.

[17] National Assembly of Viet Nam (2009), Law on Telecommunication.

Pre-reform situation

Prior to the reform, Viet Nam's telecommunication was underdeveloped. Until 1990, the sector was originally provided solely by state-owned enterprises. The diversity of services was limited. Access to modern telecommunication services and equipment was slow due to limited resource of the government, limited innovation capacity and poor competition. By 1995, Viet Nam attained an average of only 3.8 telephones per 100 people, which was much smaller than other Southeast Asian economies. This was then translated into higher communication costs for firms, which was of importance as Viet Nam was in early stage of development.

Policy response

Reforms of the telecommunication sector include: (1) horizontal measures which affect all sectors in Viet Nam's economy; and (2) specific measures on the telecommunication sector in Viet Nam. Specific structural reform measures in the telecommunication sector since 2000 include: (1) relaxation of entry for private providers, including foreign ones, in the telecommunication market; (2) equitization of government-owned telecommunication providers; and (3) enhancement of competition in the telecommunication market via regulatory changes and enforcement of competition law.

Reforming Viet Nam's telecommunication sector was a long process. In 1995, Saigon Postel – a joint stock company – was established, marking the end of government monopoly in the sector. The Military Electronic and Telecommunication Company (Viettel) was then established in 2004 and became another major competitor.

Government Decree 55/2001/ND-CP issued in 2001 excludes Internet services from the government dominating policy. Specifically, ISP business were open to the private sector and foreign investors, though the provision of Internet exchange was reserved to government owned operators or operators where the government holds majority shares.

Meanwhile, foreign investment in Viet Nam's telecommunications sector was first introduced in the form of a Business Cooperation Contract (BCC) scheme. However, the foreign partner does not have an equity claim in the assets and does not have any managerial control on the project. The first BCC scheme was established in 1988. Until 2009, there remained a number of BCCs in operation. Relaxation in foreign participation took a significant step forward when Viet Nam ratified the Viet Nam–USA BTA. The Viet Nam–USA BTA includes not only Viet Nam's commitments and obligations in the telecommunications sector but also a roadmap and blueprints for future reform. The BTA requires Viet Nam, among other things, to adopt the regulatory principles set out in the WTO Reference Paper on Basic Telecommunications so as to establish a transparent and pro-competitive regulatory regime, with the regime maintaining an arm's length with operators.

A second reform milestone was Viet Nam's WTO accession in 2007. As part of its accession commitments, Viet Nam in essence offered to all WTO members, on a most-favored nation basis, more favorable market access conditions than those offered to US companies in the BTA. This allowed joint ventures with foreign partners to provide telecommunications services related to network infrastructure such as telephone services, packet-switched data transmission services, circuit-switched data transmission services, telex services, telegraph services, facsimile services and private leased circuit services.

In terms of domestic regulations, the Law on Telecommunication in 2009 and the Competition Law in 2004 have delivered the key reforms of competition in the telecommunications sector. The Law on Telecommunications in essence establishes a framework for telecommunications regulations, with many specific regulatory items to be developed by implementation rules and regulations in the future. Relaxation of entry to the telecommunications sector, as per Viet Nam's commitment upon joining WTO, was also incorporated in the law. The law also provides for a regulatory authority to be established and in charge of regulating competition issues in the telecommunications sector and will act as a dispute settlement body for interconnection and infrastructure sharing disputes. Meanwhile, the Competition Law and its Implementation Decree No. 116/2005/ND-CP classify various telecommunications providers in Viet Nam as those with significant market power. Therefore, such providers must submit any proposal to change the retail tariff to the Ministry of Information and Telecommunications (MIC) before issuing the tariff. Moreover, 'basic' and 'important' interconnection charges that would greatly affect the telecommunications market are decided by the MIC.

The Law on Legal Normative Documents, which incorporated substances of good regulatory practices (such as regulatory impact assessment, public consultation), was only issued in 2008 and then amended in 2015. As such, one could hardly expect to collect regulatory impact assessment for related regulations of telecommunication sector. Nor were there any attempts to consult stakeholders other than the government agencies and key government owned providers in the sector. Since 2009, however, the regulations that ignited reforms in telecommunications were widely consulted and incorporate regulatory impact assessment. Nonetheless, the impact assessment was rather simple and largely qualitative in manner.

Impact

The reforms led to significant growth of telecommunication. Gross revenues of telecommunication sector rose by almost 6.2 times over the period 2007–2016, or on average by 22.4 per cent per annum. The GDP share of the information and communication sector grew on average by 8.8 per cent per annum in 2007–2017, albeit slower than in 2005 (16.3 per cent) and 2006 (9.68 per cent). In addition, Viet Nam has since moved from an underdeveloped economy to join many of its developed peers in the region in fixed-line availability. Mobile services in Viet Nam again shows a jump-start style of network expansion, surpassing both Indonesia and the Philippines during 2007–2008. The number of mobile subscribers increased by roughly 19.9 per cent per annum during 2007–2016. In the same period, the number of ADSL subscribers rose by 31.6 per cent on annual average.

The reforms contributed to improve the efficiency of various enterprises in Viet Nam. With improved quality and availability of telecommunication services, the enterprises in Viet Nam could contact and/or coordinate with their customers and network of suppliers at enjoyably smaller costs. This enhances the competitiveness of Vietnamese enterprises and ensure that they could join the global value chains in a timely manner.

Challenges and lessons

Reforms of the telecommunication sector in Viet Nam encountered several challenges, particularly before 2007 (the milestone of major reforms). First, increasing competition and private participation in the sector encountered difficulties, due to: (1) previous dominance of

the government-owned providers; (2) inadequate institutional and technical capacity of competition authority to address competition cases in the sector; and (3) ambiguity in the classification of telecommunication as public services, given that rural access to such services was also a priority. Second, improving regulatory institutions and processes were seen as critical, but entailed ample technical challenges. Third, restructuring and reforming the dominant carriers are no easy task, as was observed in the generally slow process of reforming state-owned enterprises in Viet Nam until 2016.

Some key lessons could be drawn from the reforms of telecommunication sector as follows:

- The sizeable benefits from reforming telecommunication sector shows that such reforms were simply irreversible. As such, economy-wide perspective should be adopted in structurally reforming the sector.
- Enhancing competition and/or contestability of telecommunication helps maximize the value for consumers;
- Devising a consistent and feasible roadmap for reforming telecommunication sector plays an essential role;
- Leveraging the external pressures can be beneficial in sustaining the momentum for reforming telecommunication sector.