



DOSSIER **INFRASTRUCTURE AUTHORITIES**

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Contents

4 Foreword

5 Advisory Bodies for Infrastructure Planning

Stefano Napoletano, *McKinsey & Company*

8 How infrastructure investment should be planned and executed by public institutions

John Ward, *Bartlett School of Planning, University College London*

10 The role of Innovation and Networks Executive Agency in the implementation of transport infrastructure projects in Europe
INEA

12 Infrastructure Canada

Matti Siemiatycki, *University of Toronto*

14 Infrastructure Australia

Elizabeth Kelleher-Cook, *Infrastructure Australia*

16 Infrastructure and Development: The Case of Infrastructure Asia

Willie Tan, *Department of Building, National University of Singapore*

19 Case study of Ninh Thuan solar project

Foreword

About the Centre on Infrastructure

The Centre on Infrastructure focuses on how geopolitical and economic trends shape and are shaped by investment decisions on infrastructural projects. It aims to analyse global trends (new technologies, mobility, sustainability, etc.) and monitor major projects, also with a view to gauging their complementarity/competition and financing channels. Specific attention is devoted to the role of key economic and political players at all levels – from local to global – including regional and international development banks, whose “political” agenda is often crucial to foster public and private investment. Also thanks to the knowledge partnership with McKinsey & Company, the Centre carries out analyses and promotes workshops and conferences targeted to the business community and to national and international institutions.

About the Dossier

Effectiveness, transparency and predictability are more and more imperative words in infrastructure planning and realization. In the last few years, a rising number of Independent Infrastructure Advisory Bodies have been established to ensure a support to national and local governments in planning and realizing a long-term infrastructural strategy. These institutions may represent a very important tool to evaluate on an objective basis the entire life cycle of an infrastructure, from the design to the post-mortem assessment, eventually reducing realization and maintenance costs. The spreading of such institutions on a global scale would help reduce the political discretion in decisions concerning infrastructure, potentially reducing risks of waste of public money, and increasing the share of private financing in infrastructure investments.

How are these institutions designed to ensure independence and strengthen infrastructural projects’ credibility? What are the main best practices established in EU, Canada, Singapore, Australia and United Kingdom? How can they intervene in each phase of the process?

Aim of this dossier is to provide an answer to these questions and to better understand how these institutions are designed and work.

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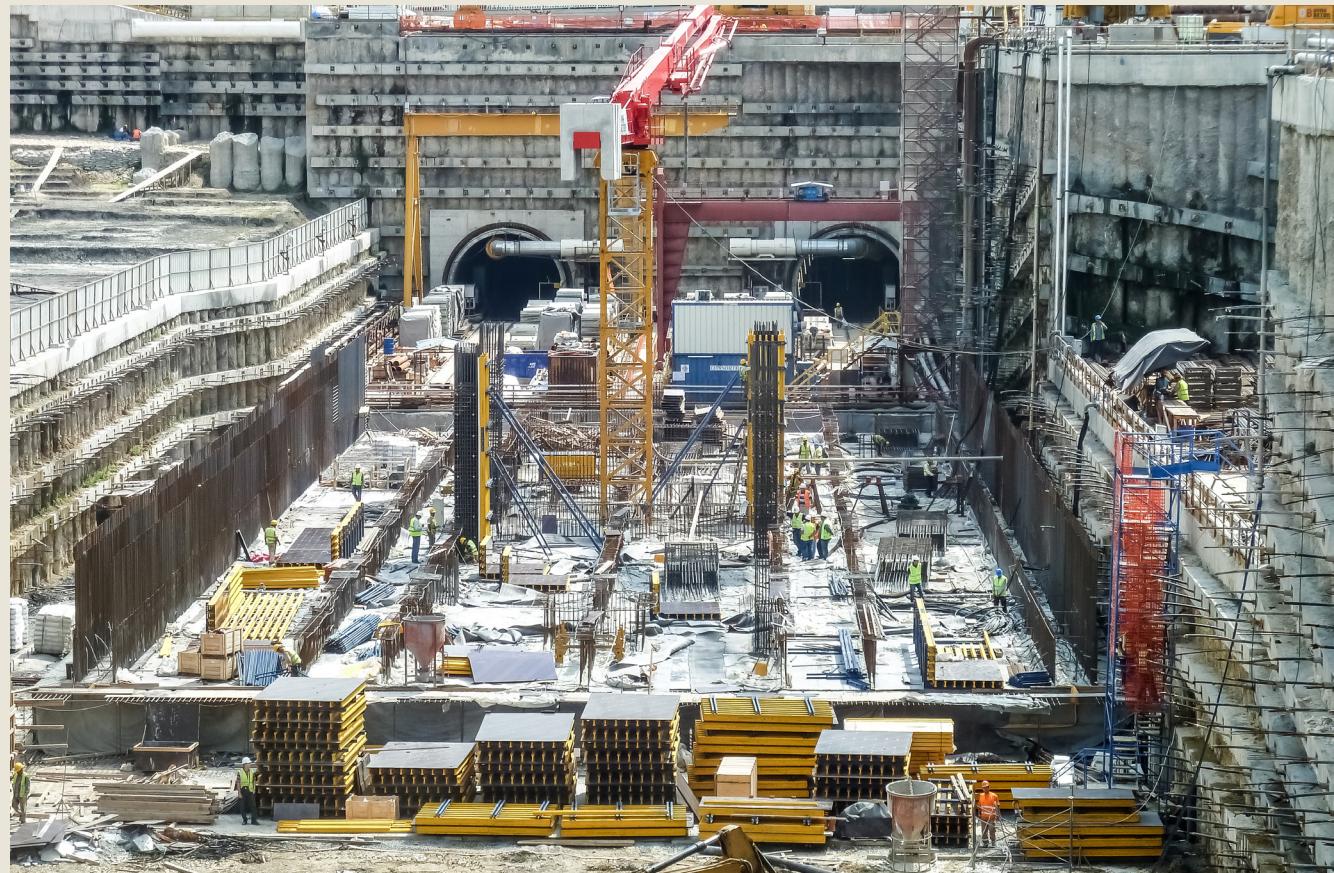
Carlo Secchi, Vice President and Head of Centre on Infrastructure, ISPI

Advisory Bodies for Infrastructure Planning

Stefano Napoletano, *McKinsey & Company*

Investments in infrastructure represent a fundamental component of the economic and social development of a country and geographic area. State-of-the-art and efficient infrastructure provides substantial benefits such as new jobs, lower production and transportation costs, interconnected markets, and privileged access to key services like health and education. Sound infrastructure allows to effectively size the benefits of globalisation and ensure such benefits are widely shared among the population and among different locations. For example, according to a recent report funded by the European Commission, the completion of the core TEN-T networks in the European Union will create 800,000 new jobs and an additional GDP growth of 1.6% by 2030.

To achieve this, infrastructure development should be planned thoughtfully. The long-lasting nature and significant costs of infrastructure require a comprehensive and long-term vision at both the national and regional level. Infrastructure should anticipate social and demographic changes and should be forward-looking enough to capitalise on the advantages of technological progress. At the same time, uncertainties regarding



DOSSIER INFRASTRUCTURE AUTHORITIES

external conditions in the long run – in particular due to the rapidly changing technological framework and constant social evolution – require a certain degree of flexibility in both the planning and delivery phases.

In this context, a sound and credible institutional framework is a key factor. Independent and transparent planning, together with political audacity and commitment, represent fundamental pre-requisites for successful infrastructure planning and development. Infrastructure spending should be anchored to a long-term vision and funding commitment which is independent from the political/election cycle. Such a stable framework can be achieved through the establishment of independent national advisory bodies providing assistance over the entire investment planning process. This kind of institutional setting should have the benefit of enhancing transparency and reducing the impact of political exigency. Most importantly, it should help increase the longevity of infrastructure plans and ultimately reduce the cost of projects. The ultimate aim of an independent planning body is not to remove the decision-making capacity from politicians, as that would also remove the necessary leadership and commitment, but to provide politicians and other stakeholders with the full range of information to make the right decisions and shorten the decision-making process.

Such principles are at the basis of the establishment of independent infrastructure advisory bodies in several developed countries (e.g. Infrastructure Australia, Infrastructure Canada, Infrastructure and Projects Authority in UK, etc.). These are institutions that advise and assist all levels of governments, as well as investors and owners of infrastructure, in identifying and prioritising the delivery of infrastructure. In developed countries in particular, the focus will increasingly be on brownfield investments (i.e. upgrades of existing projects), since there might be limited capacity to introduce new infrastructure (i.e. greenfield projects). Construction of new roads, railroads and ports in developed countries may prove more difficult due to their environmental impact and the risk of overlap with existing infrastructure. Independent advisory bodies are thus essential to assess the pros and cons of infrastructure projects, evaluating the long-term economic performance and social wellbeing triggered by an infrastructure investment.

They are also fundamental to address inconsistent approaches to planning infrastructure investments focused at the level of individual projects, without an adequate evaluation of need or defining the problem from an integrated national perspective. Key responsibilities of these bodies include, among others:

- Definition of nationwide long-term infrastructure strategies;
- Advice on policies to favour infrastructure development;
- Individual project evaluation and prioritisation, for both existing and new infrastructure;

- Elaboration of “post-mortem” analyses on past projects, to identify insights/best practices to be applied to future projects;
- Support in finding access to funding and resources, both private and public;
- Guarantees on timely delivery, measurement of performance and definition of improvement actions for existing projects;
- Advisory support to regional and local governments to enhance their capacity to identify and prioritise their infrastructure needs;
- Increase in the quality of infrastructure procurement and delivery.

Experts agreed that the creation of such independent advisory bodies had several positive impacts on infrastructure planning. They are usually welcomed by all stakeholders to secure a more bi-partisan support for project priorities. Decisions taken by an independent body help develop a broad consensus on long-term strategy, enabling coordination of infrastructure planning and providing advice and best practice support to inform infrastructure decision-making. They also add greater transparency and visibility to the process of project selection and prioritisation. Independence from national governments is a key element to enhance the effectiveness and credibility of such institutions, in particular when engaging with the private sector and local governments.

The dossier will focus on six key dimensions that are essential to evaluate the functioning of existing advisory bodies. First, the designated authority shall consider the geographical scope (e.g. national and/or local level, etc.) and time-span of the plans developed (e.g. 5-10 years, etc.). The scope of these agencies and their mission may be very different and ranges from the formulation of new investment projects to the assessment of projects proposed by other entities. The assessment involves some key variables such as effectiveness, cost for taxpayers, environmental impact and territorial balance. At the end of the assessment process, the institution releases an output that often includes a list of admitted projects, a ranking of selected infrastructures or the provision of direct feedback to the proponent. The effects of the output depend on the legal force of the institution’s assessment on government decision, which can be binding or non-binding. Finally, the independence and transparency of the advisory institution must be evaluated considering the institution’s governance, decision-making process, and accountability.

Independent advisory bodies in infrastructure are increasingly deemed as essential to ensure a responsible use of public funds and a correct prioritisation of infrastructure needs, especially in countries where public finances are constrained. In a long-term strategy, the independent advisory bodies should be entrusted – alongside their national governments – to elaborate long-term national infrastructure development plans, in order to ensure the planning and construction of infrastructure in a cross-sectoral and systematic way.

How infrastructure investment should be planned and executed by public institutions

John Ward, *Bartlett School of Planning, University College London*

The intense pressures of economic competition at a global scale are fueling the growth of major infrastructure investments at an unprecedented rate. These investments are frequently perceived as critical to the 'success' of major urban, regional and national development through their ability to affect significant socio-economic change (OMEGA Centre, 2012). Notwithstanding that major and 'mega' infrastructure investments currently dominate development agendas worldwide, they hold significant notoriety due to their widespread inability to meet their original expectations, as evidenced by the proliferation of international academic and grey literature seeking to understand and mitigate against the drivers of such failure (see, amongst others, Hall, 1980; Morris and Hough, 1987; Flyvbjerg et al., 2003).

An in-depth international study of 30 mega projects (OMEGA Centre, 2012) across ten developed countries in Europe, America, East and South East Asia, found the conventional wisdom of major project planning and delivery as too narrow in scope to adequately consider the risks and uncertainties typical of such projects over the long term. It follows that the toolsets currently deployed for infrastructure planning cannot respond robustly to, for example, unexpected events or policy changes external to project management decision-making. Given that many major projects often become strategic change agents with multiple spatial, economic, environmental and social impacts, research suggests such projects require framing within a broader set of perspectives, thus acknowledging the existence of a wider purpose beyond the more immediate project delivery concerns (OMEGA Centre, 2011:96). This is particular so considering the significant interdependencies and long development and operational phases that major projects entail. Therefore, the real challenge facing infrastructure development in general, and decision making in particular, is not only represented by how to overcome the irreducible complexity and uncertainty which characterizes the delivery of large-scale infrastructure, but equally important is how to shape these long term and interconnected endeavors, framing and reframing their strategic missions against fast changing contextual forces and trends.

A key element of responding to such challenges is adequate levels of Institutional, policy and legislative support without which major projects are unlikely to be able to deliver the full range of planned benefits to be deemed truly successful. Whether such an institutional framework is bespoke or represents an adaptation of current arrangements, the OMEGA findings point to the critical requirement for it to be transparent and accountable over the long-term. With this in mind, such frameworks need to

be capable of addressing the wide-ranging expectations and aspirations that major projects inevitably engender. Considering the UK institutional frameworks in light of these findings, there has arguably been a historical lack of the necessary support to simultaneously consider both the tactical and strategic aspects required of successful infrastructure investment. However, the recent creation of two new institutions, namely the National Infrastructure Commission (NIC) and the Infrastructure and Projects Authority (IPA) offers to put the UK on a stronger footing in this regard. The NIC, an executive agency, sponsored by HM Treasury and formed in 2015, aims to provide government with impartial, expert advice on major strategic infrastructure challenges over the long-term. Whilst the IPA, formed in 2016 from an amalgamation of Infrastructure UK (IUK) and the Major Projects Authority (MPA) has a mandate to “support the successful delivery of all types of infrastructure and major projects ... to ensure infrastructure and major projects are delivered efficiently and effectively”¹. The creation of the IPA and NIC are significant steps towards the development of supportive institutional, policy and legislative frameworks. The MPA was, with its publication of the National Infrastructure Pipeline, often criticized for a lack of cross cutting strategic foresight (IoG, 2017), but this is expected to improve with the strategic support of the NIC. However, whilst it is too early to evaluate the impacts these two institutions have had on the planning of successful major infrastructure investments, preliminary research in this regard suggests both organisations face challenges against the priorities identified in the OMEGA research cited above. The NIC, whilst focusing broadly across UK infrastructure sectors, has not been established on the independent and depoliticized footing it initially envisaged, ultimately threatening its ability to influence the countries strategic infrastructure development over the long-term (Aitken, 2019). The IPA still struggles with the thorny issues of project evaluation (NAO, 2016). Importantly, for two institutions dealing with the strategic and operational ends of infrastructure success, the evaluation and decision making frameworks deployed across and between the NIC and IPA, remain, respectively, either underdeveloped (Aitken, 2019) or underapplied (NAO, 2016). Resolving the subsequent inconsistencies across the “valley of death between policy creation and programme delivery” (Civil Service World, 2018) towards integrated institutional and evaluation frameworks and methods remains a priority for these two institutions going forward.

¹ <https://www.gov.uk/government/organisations/infrastructure-and-projects-authority/about>

The role of Innovation and Networks Executive Agency in the implementation of transport infrastructure projects in Europe

INEA

The Innovation and Networks Executive Agency (INEA) was established in 2014, as the successor of the TEN-T Executive Agency, for the development of the Trans European Transport Network (TEN-T). INEA supports the Commission, the project promoters and the Member States by providing high quality programme management to infrastructure projects. INEA manages the Connecting Europe Facility (CEF), which is the EU programme dedicated to co-financing infrastructure projects in the fields of Transport, Energy and Telecommunications.

With a budget of €22.4 bln INEA currently manages a portfolio of 756 Actions under CEF Transport, involving hundreds of beneficiaries from all Member States. The Actions aim to facilitate the development of transport infrastructure, by offering financial support for studies, works or both. They cover all modes of transport (aviation, rail, road, maritime and inland waterways) and they are located along an agreed and defined transport network that covers the entire EU.

For each of the Actions INEA and the concerned beneficiaries sign a Grant Agreement, which describes in detail all the elements of the Action. While the Commission (defines the policy, strategy, objectives and priorities, INEA is responsible for managing the projects throughout the entire grant management cycle – from publishing the calls for proposals to the ex-post audits. In this process, INEA makes sure that the EU budget is well spent and supports the Commission and the beneficiaries so that the projects bring added-value to citizens and society.

A key objective of the Agency is to guarantee that the projects supported by the programme deliver the expected results. To this end, the people of INEA systematically support the beneficiaries by guiding them on the applicable rules and helping them to take the right decisions concerning the management of their Actions. Project promoters and stakeholders receive specialised knowledge and expertise on EU rules.

The support to the selected beneficiaries starts from the Grant Agreement preparation stage, where the project managers of INEA explain all the relevant issues and agree with the beneficiaries the exact terms and conditions, taking into account possible remarks from the evaluation of the proposal or any other relevant development.

The interaction with the beneficiaries continues throughout the Action life cycle. The CEF Transport programme supports large infrastructure

projects, which are usually long-term and comprise a series of procedures governed at national level, while respecting the applicable EU rules. These procedures (public procurement, land acquisition, authorisations and permits, including environmental ones) are lengthy and may create delays, which, together with cost overruns, may result in serious deviations from the original planning.

A main aspect is the establishment of a trust-based relationship with the beneficiary, allowing a continuous and close monitoring of the Action. Moreover, INEA systematically collects information on the progress of the Actions and monitors their advancement. Apart from the systematic, direct contact with the beneficiaries, a basic tool in this process is the yearly report that all Actions have to submit, where they describe in detail their financial and technical progress. In addition to that, INEA organises on-site technical visits in cooperation with the beneficiaries as well as portfolio review meetings with the Member States.

Furthermore, INEA provides valuable support and feedback from the implementation of the projects to the Commission. This reinforces the policy-making capacity of the Commission and increases the relevance of its policies through informed decisions.

Equally important is to communicate the Agency's activities to the public, in order to ensure transparency and to raise visibility of the projects' results. Every Action managed by INEA has a dedicated fiche, easily accessible to any interested party at INEA's website. The reader can also consult INEA's publications and news/events.

By closely monitoring technical and financial progress and assisting, where necessary, the projects in overcoming difficulties, INEA is a catalyst in project implementation at EU level. This is an added-value service for all stakeholders. The beneficiaries receive assistance in practical terms, helping them to complete their projects or to take the right decisions about them, when they are not progressing according to the initial plan. The Commission and the Member States obtain valuable information, which they can use for their policy-making and future planning. INEA will continue this approach with the aim to maximise the efficiency of the EU funds entrusted to its management.

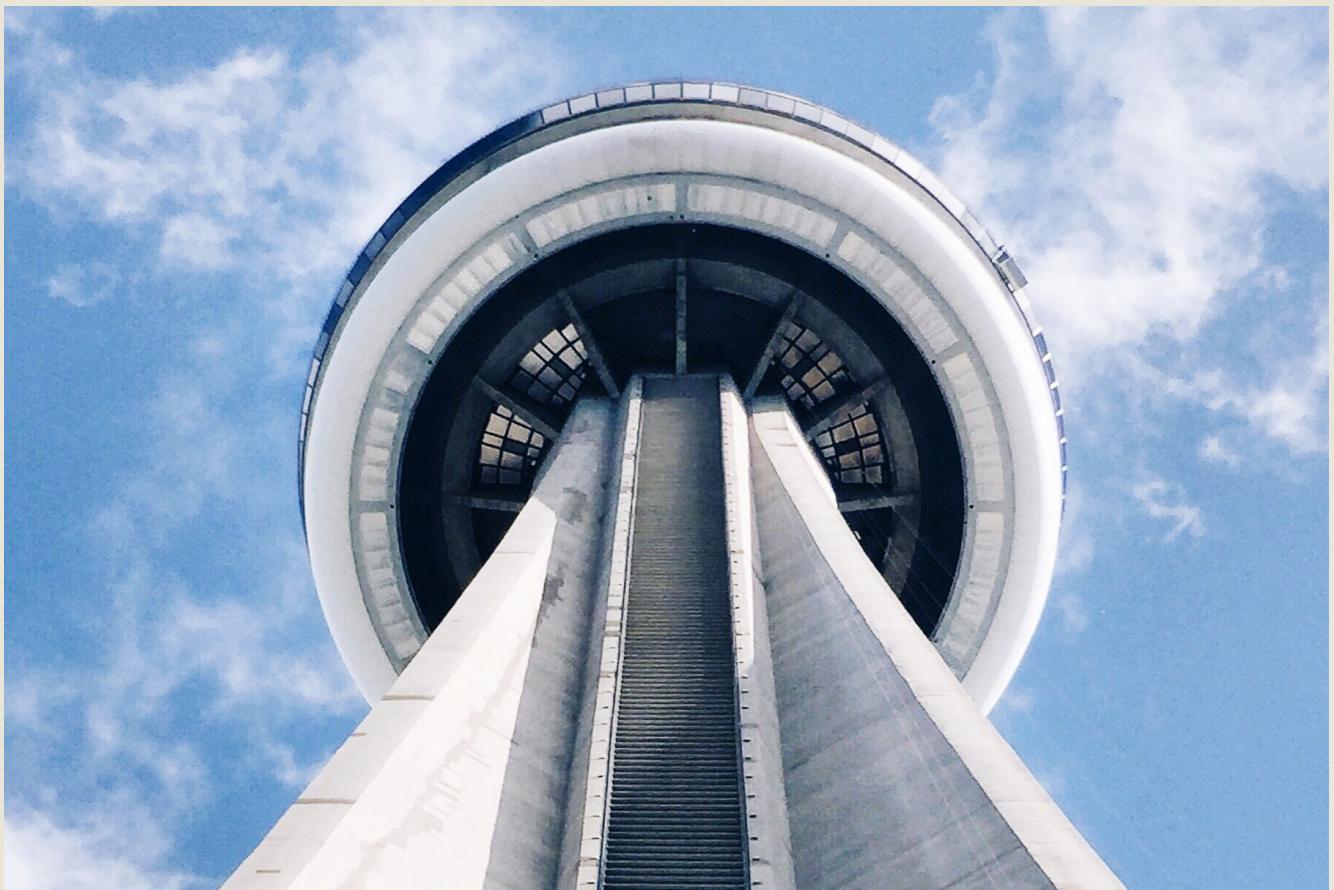
Infrastructure Canada

Matti Siemiatycki, *University of Toronto*

Infrastructure Canada is the national ministry of infrastructure rather than an independent government agency or advisory body. It designs and administers the national government's funding programs to infrastructure across a variety of sectors such as transportation, water, energy, and social infrastructure. Under the Canadian constitution, the national government actually has fairly limited jurisdiction over the ownership, planning and operations of infrastructure, which is primarily controlled at the provincial level. The country's ten provinces and three territories then delegate considerable responsibility for infrastructure provision to the municipal governments. In 2016, only 2.1% of all public infrastructure in Canada was owned by the national government, compared with 58% owned by local governments, and 38.1% by the Provinces.

The Canadian federal government's role in infrastructure has thus primarily been focused on supporting the funding and delivery of infrastructure carried out at the other levels of government. The national government can, to some extent, shape the types of infrastructure projects that get prioritized by other levels of government through the funding programs it puts in place. In 2018 Infrastructure Canada released the 12-year, \$180 billion *Investing in Canada* national long-term infrastructure plan that allocates funding to five key classes of infrastructure: public transit, green infrastructure, social infrastructure, trade and transportation, and rural and northern infrastructure. Nearly all projects are proposed by other levels of government that make requests of the federal government for funding, which come through Infrastructure Canada. Infrastructure Canada negotiated bi-lateral agreements with each of the provinces and territories that establish how much money they will receive for each class of infrastructure. This ensures that there is an equitable allocation of national government funding to infrastructure across the entire country, while providing the provinces and their municipal subsidiaries with predictability and considerable flexibility to select their preferred projects within nationally set objectives.

When Infrastructure Canada is assessing whether to provide funding to provincial or municipal projects, the assessments of the merits of the project tend to be done on an ad hoc basis by the provincial or municipal project proponent, without standard assessment criteria or methodology. In practice the system is quite politicized rather than requiring rigorous evidence based cost-benefit assessments of value for money as the basis for decision making. Political negotiations between the different levels of government are often a critical driver in determining which projects will be prioritized. This has posed a challenge in terms of effectively allocating long-term funding to the most critically needed infrastructure. Additionally, Infrastructure Canada has developed a variety of new programs – the



Smart Cities Challenge, the Disaster Mitigation and Adaptation fund, and the launch of the Canada Infrastructure Bank – which extend the level of direct national involvement in evaluating, selecting, financing and delivering infrastructure projects initiated by the provincial and municipal governments, as well as private sector proponents.

As a line ministry of the Government of Canada, Infrastructure Canada is accountable through the regular parliamentary mechanisms. The organization is overseen by the Minister of Infrastructure and Communities. The government appoints the deputy minister who is the top leader that manages the operations of Infrastructure Canada. The programs and budgets of Infrastructure Canada receive parliamentary oversight and approval. There are no mandatory ex-post evaluations of Infrastructure Canada's investment decisions and the outcomes that have been achieved. The organization does periodically publicly release progress reports and conducts performance reviews. It is also subject to audits and reviews by the national Auditor General of Canada, which can conduct independent value for money studies of Infrastructure Canada's projects and programs. A considerable gap in the Canadian infrastructure ecosystem is that there is not a formal, mandatory requirement to rigorously evaluate the outcomes of national government investment programs. There is thus a knowledge gap in terms of project delivery performance, and whether national government money spent on infrastructure is achieving the intended economic, social and environmental benefits.

Infrastructure Australia

Elizabeth Kelleher-Cook, *Infrastructure Australia*

Infrastructure Australia was established in 2008 to advise governments, industry and the community on the investments and reforms needed to deliver better infrastructure for all Australians.

Infrastructure Australia has two core functions. The first is to set the agenda on the long-term opportunities for infrastructure investment and reform. The Australian Infrastructure Audit acts as the foundation for Infrastructure Australia's reform and investment recommendations. The Audit, released every five years, takes a forward-looking view to assess Australia's nation's infrastructure needs and examines future challenges and opportunities. Developed in collaboration with Australia's governments, industry and communities, the Audit provides the rich evidence base underpinning Infrastructure Australia's advice. In turn, it informs the organisation's other key publications: the Australian Infrastructure Plan, the Infrastructure Priority List and the Reform Series of advisory papers.

The Australian Infrastructure Plan sets out policy responses to the infrastructure needs identified in the Audit. Intended to support the ambitions of Australia's governments, as well as industry and community, the next Plan will be released in 2021. Infrastructure Australia publishes additional data and research on how best to implement the reform recommendations of the Plan via the Reform Series, a series of advisory papers for government, industry and communities. The Reform Series allows Infrastructure Australia to support the momentum of reform and to spark national conversations about what we want to get out of our infrastructure networks and steps to get there.

The second core function of Infrastructure Australia is to evaluate business cases for nationally significant² investment proposals that are seeking more than \$100 million in Commonwealth funding.

Infrastructure Australia relies on a robust assessment process to independently evaluate infrastructure proposals and ensure they offer the best use of public infrastructure funds. This process, grounded in principles of transparency, supports community confidence in future infrastructure investments.

The publicly available Infrastructure Australia Assessment Framework sets out the process by which Infrastructure Australia assesses any given proposal and provides actionable guidance on the information and economic analysis required for a project to be included on the Priority List.

Business cases that withstand a rigorous economic assessment are then added to Infrastructure Australia's Infrastructure Priority List³. The Priority List is a consensus list of nationally significant investment opportu-

² A nationally significant project is an area (like water, transport, energy or communications) in which investment will materially improve national productivity.

³ The Infrastructure Priority List, available at <https://www.infrastructureaustralia.gov.au/infrastructure-priority-list>

nities that address critical gaps in our infrastructure, is updated annually. The Priority List has two broad categories: Projects and Initiatives. Projects are proposals for which we have seen and assessed a fully-developed business case. Initiatives are early-stage proposals that require further development. Infrastructure Australia has the power to identify infrastructure initiatives, which are a call to action for governments or the private sector to submit a business case.

The 2019 Infrastructure Priority List⁴ presents 121 nationally significant proposals, with a combined value of AUD\$58 billion.

The process of evaluating business cases is underpinned by Infrastructure Australia's Assessment Framework⁵, which provides detailed guidance on how a business case should be prepared. There are five stages to submitting a project to the Infrastructure Priority List, as outlined in the Assessment Framework. Early stage processes include groundwork like identifying the cost of the problem or the value of the opportunity, and long-listing and shortlisting a range of possible solutions. Once a business case has been completed, it is evaluated on strategic fit, social, economic and environmental benefits, and deliverability. Infrastructure Australia uses a benefit-cost ratio (BCR) to show the cost of the project against the projected benefits it would have to the community and the economy.

After a project moves through these stages and is delivered, proponents are encouraged to submit a post completion review. This step is crucial to identifying any pressure points or errors in order to build future industry and planning capability for significant infrastructure projects.

Established under the Infrastructure Australia Act 2008, Infrastructure Australia is an independent statutory body. In 2014, the legislation was amended to establish the institution's independence from the Department of Infrastructure & Regional Development, establishing its current board and CEO structure. Members of the board, including the Chair Julieanne Alroe are appointed by the Minister for Infrastructure, the Honourable Michael McCormack, Deputy Prime Minister of Australia, and Minister for Infrastructure, Transport and Regional Development. Infrastructure Australia's board members are drawn from business, academia and across the public and private sectors, and represent an array of sectors and jurisdictions. The organisation's Chief Executive Officer Romilly Madew AO reports to the Infrastructure Australia Board, and is supported by an executive leadership team overseeing four business functions. More information on our Board members, organisational structure, Annual Report, Corporate Plan, Statement of Expectations and more is available on our website⁶.

4 The 2019 Infrastructure Priority List, available at <https://www.infrastructureaustralia.gov.au/search-priority-list-map>

5 The Assessment Framework, available at <https://www.infrastructureaustralia.gov.au/publications/assessment-framework-initiatives-and-projects>

6 About us, available at <https://www.infrastructureaustralia.gov.au/about-us> <https://www.infrastructureaustralia.gov.au/about/accountability-and-reporting>

Infrastructure and Development: The Case of Infrastructure Asia

Willie Tan, *Department of Building, National University of Singapore*

Currently, Asia has a population of 4.6 billion and a GDP of US\$31.58 billion. Its annual infrastructure spending amounts to about 3% of GDP (US\$0.95 trillion) and, if Asia is to limit the adverse effects of climate change and rising sea levels, it will need to invest 4.5% of GDP (US\$1.42 trillion). These are approximate estimates, given that infrastructure spending varies between 2.5% to 8% of GDP for most countries globally.

Singapore, with its strong record of accomplishment and excellent infrastructure, is positioning itself to be Asia's leading infrastructure hub. In



2018, it established a small infrastructure office, called *Infrastructure Asia* (IA), to act as catalyst to develop bankable projects in different sectors in the region. These projects are long-term, ranging from 10 – 35 years, and usually structured on Public-Private Partnership (PPP) basis to overcome the fiscal deficit in many Asian countries. IA reports to the Monetary Authority of Singapore (MAS) and Enterprise Singapore, a statutory board under the Ministry of Trade and Industry. Its main task is to connect a large network of industry stakeholders with project initiators, such as regional and local governments. IA does not evaluate or fund infrastructure projects.

The theoretical basis of IA goes back to the traditional industrial policy of Developmental States like Japan, Singapore, South Korea and Taiwan to overcome market failure, which is essentially caused by opportunism and poor coordination among market participants. Opportunism manifests itself in misrepresentation, shirking, free riding or under-declaration to



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avoid paying for public goods, monopolistic overcharging, the generation of negative externalities, and taking excessive risks that destabilize the financial system. It is the second aspect of market failure, the need for coordination to implement large infrastructure investments, which underpins transformative and active industrial policy.

However, unlike traditional targeting to pick winners, trade protection, exchange rate policy, technology acquisition, tax breaks, and subsidies to promote exports, the *new* industrial policy is different in four aspects, namely,

- the focus on structuring opportunities,
- networking,
- information sharing, and
- capacity building.

IA do not evaluate projects but brings together development finance institutions, private sector companies, and public agencies to produce sustainable and bankable urban solutions in the region. It also facilitates capacity building to strengthen the ability of Asia's public agencies to regulate, sell, design, and implement complex projects.

Currently, IA has a network of over 300 companies and institutions with expertise in developing infrastructure projects across the entire value chain, including urban planning, financing, insurance, procurement, engineering design, construction, dispute management, operations and maintenance, and asset management. IA is composed by a small office (1 CEO, a deputy, and 2 directors) set up by Monetary Authority of Singapore (MAS) and Enterprise Singapore (a statutory board). It leverages on Singapore's reputation as a financial center with strong legal and professional services, a vibrant asset management ecosystem, an effective regulatory framework, and a neutral international dispute resolution center.

Case study of Ninh Thuan solar project

To identify suitable projects for feasibility studies, IA works with regional governments and third country champions to bring them to the market. For example, in April 2018, the Ninh Thuan US\$150m 168 MWp solar project was one of the deals at the Vietnam-Singapore Business Dialogue headed by the Prime Ministers of both countries. The main sponsor is Sunseap, with CMX Renewable Energy of Canada and InfraCo Asia as minority shareholders. Sunseap is a Singapore-based clean energy provider with regional experience in solar projects, and InfraCo Asia is an infrastructure investment company headquartered in Singapore. This is Sunseap's first project in Vietnam, and IA played a role in building Sunseap's capacity and connecting it to industry stakeholders and financiers. Bangkok Bank provided a US\$120m loan facility.

The project company signed a 20-year Power Purchase Agreement (PPA) with Electric Power Trading Company (EPTC), a subsidiary of state-owned Electricity Vietnam (EVN), the largest power company in the country. The mandated feed-in tariff is 9.35 US cents per kWh. Construction of the solar farm started in June 2018 and the project was completed in June 2019, slightly ahead of schedule despite the usual issues such as securing permits and land, capacity of local contractors, and limited capacity and quality of the grid. As for off-taker risk, EVN has never defaulted on a PPA where the investor is a foreign entity.

In summary, the infrastructure market does not rise spontaneously. It has to be created and coordinated among stakeholders, and IA was set up to fulfil this task. The risks are then shaped, reshaped, and fairly shared so that projects are bankable.



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