

# Enabling Better Infrastructure



## EBI Green Paper consultation: What do governments need to know to plan infrastructure better?

May 2023

### Executive summary

The world is changing rapidly and this is placing new demands on infrastructure systems. In response, governments have reaffirmed their commitment to the United Nations' Sustainable Development Goals (SDGs) and to climate change targets<sup>1</sup>.

While global changes have always impacted the way infrastructure is planned and prioritised, the recent onset of Covid-19 and global geopolitics has hastened and deepened many of these challenges while also bringing to the fore new considerations, such as the need to re-prioritise infrastructure and find new sources of financing and funding.

For government departments responsible for infrastructure, the key concern in meeting these challenges is strengthening governance. This involves investing in strategic infrastructure planning and prioritisation to create stable, sustainable and investable national infrastructure pipelines to attract new sources of finance.

Responding requires new ways of working and different kinds of evidence to create impact. For example, government departments need to find ways to reprioritise infrastructure while also understanding how shifting patterns of behaviour affect infrastructure demand. This often requires new ways of gathering and using data, such as digitalisation.

Drawing on preliminary work conducted by the Enabling Better Infrastructure (EBI) programme, this Green Paper sets out updated guidance aimed at helping government departments to strategically plan and prioritise infrastructure in a changing world.<sup>2</sup> The updated guidance includes:

- a three-step process
- supporting factors
- a self-reflection tool.

**This Green Paper aims to test these updates by calling all stakeholders involved in the strategic planning and prioritisation of infrastructure to respond to the questions outlined on page 9.**

**Responses gathered by the consultation will ensure our guidance is up-to-date and accessible to the stakeholders who use it.**

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<sup>1</sup> It is estimated that the world will need to increase the [proportion of GDP](#) it dedicates to infrastructure to 3.5 percent between 2016 and 2040.

<sup>2</sup> This includes key findings gathered by the Institution of Civil Engineers' [Enabling Better Infrastructure \(EBI\) programme scoping study](#), published in November 2022, and interviews with 25 stakeholders involved directly in strategic infrastructure planning.

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One critical feature of our guidance is that it acknowledges infrastructure planning as a political process by incorporating considerations of the enabling environment, or the context within which decisions are made. This includes considering all

stakeholders, political agendas, decision-making capabilities and networks and how to work together to inform strategic approaches at the national scale.

Your response to the consultation will help us:

- define a common process while ensuring flexibility to enable all government departments to use it
- acknowledge and react to national and international factors impacting strategic infrastructure planning
- confirm the prerequisites that government departments need to help strengthen their strategic infrastructure planning process, e.g. defining national needs
- establish the starting point and supporting factors to produce national and regional strategic infrastructure plans
- draw together practices from different government departments to help build knowledge on different ways of working (e.g. how to work with all stakeholders and how to reprioritise infrastructure amid cost-of-living concerns)
- define ways government departments can self-assess their needs and the steps they need to take to meet these needs
- ensure our guidance is informed by insights gathered from all stakeholders working in this area.

## Why do governments need to plan infrastructure more strategically?

Strategic infrastructure planning is a multi-step process to create a long-term strategy for creating and implementing an infrastructure pipeline of investments. Strategic planning ensures that societal needs for economic infrastructure (water and sanitation, waste, energy and transport) and social infrastructure (housing, hospitals and schools) are met as part of a sustainable programme of work.

To develop a strategy, there are three key things national departments responsible for infrastructure need to do:

1. Set objectives.
2. Assess needs.
3. Develop a strategy.

Planning infrastructure strategically also involves regularly reviewing outcomes and steps to reassess and refine the strategy over time (see steps marked with an asterisk, Figure 1).

Although national or regional government departments set up most strategies, other stakeholders also feed into this process, including financial institutions, private infrastructure developers and contractors.

Setting up a strategic planning process and steps for review and refinement creates the following key benefits.<sup>3</sup>

- The infrastructure system's contribution to meeting national objectives is maximised via a package of investments and other measures that is greater than the sum of its parts.
- Public confidence in the process is improved via transparent and inclusive decision-making, and reliable delivery.
- Investor and supply-chain confidence is increased, unlocking private finance options and supply-chain investment in delivery capability.
- Project delivery and benefits realisation are improved via better coordination of the national strategy with any sectoral or regional plans.

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<sup>3</sup> Institution of Civil Engineers (2019) [Enabling Better Infrastructure report](#)

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- The affordability of future investments is improved by supporting sustainable economic growth.
- The restructuring of infrastructure planning post Covid-19 is helped by the creation of long-term planning objectives and outcomes.

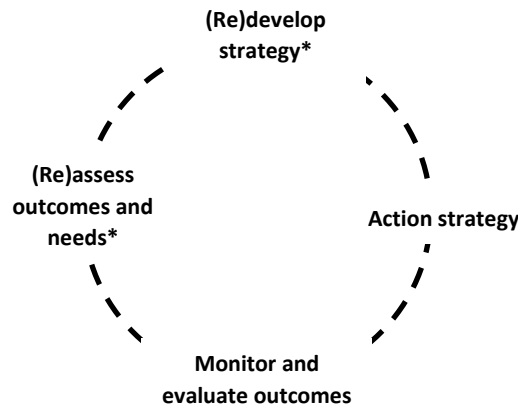


Figure 1: Overview of the strategic planning process, including developing and refining an infrastructure strategy

## ***A long-term approach to meeting Malaysia's national needs through strategic planning***

Steps taken by Malaysia to strategically plan its national infrastructure have resulted in a range of long-term benefits for society, the economy and the environment. This is encapsulated by the country's plan-based approach to driving developmental change, much of which is delivered through infrastructure.

While Malaysia produced its first development plan in the 1950s, the *Malaysia 2020 Vision* in 1991 marked a key moment in its planning history, where it outlined its aspirations to become a fully developed country by 2020.

### ***Malaysia's strategic planning timeline***

The first national development plan produced by Malaysia was called the *1st Malaysia Plan*. The country has since developed plans every four years, using each iteration to further identify, access and respond to national needs (infrastructural, social or other), producing 12 *Malaysia Plans* to date.

The succession of plans outlines a clear approach for developing strategic targets over time. It also demonstrates how Malaysia has built-in opportunities to evaluate and boost the impact of strategic planning.

### ***Reflecting and strengthening***

After actioning the *Malaysia 2020 Vision*, a consistent level of economic growth was achieved. This was boosted through the actioning of the 6th to 12th *Malaysia Plans*. Much of this was achieved through action around infrastructure.

Inclusivity and connectivity of rural areas (transport and basic services) remained key concerns in the years after the *Malaysia 2020 Vision* was launched.

Through review, these latter considerations have now become prominent concerns and have since formed part of Malaysia's ever-evolving plan-based approach to ensure Malaysia's needs are met, be it infrastructural, social or other. These are noted as key concerns in the 11th and 12th *Malaysia Plans*.



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## Why do governments need to go through the three-step process?

Strategically planning infrastructure involves three key steps. Regardless of which country you are developing a strategic plan for or which sector you work in, the steps are necessary to create a strategy that meets developmental, societal or other needs and fits into a broader agenda for infrastructural system development.

Each step of the process underlines critical activities for government departments to ensure the longevity and social benefits of their infrastructure. The role of each step and supporting sub-steps is outlined in Table 1.

These steps are intended to be followed linearly. Skipping a step will jeopardise the impact of the strategic planning process. Identifying national and regional objectives and critical needs must precede strategy development.

**Table 1: Overview of the three-step process to strategically planning infrastructure**

Key step	Overview of sub-steps
<b>1. Set objectives</b>	<ul style="list-style-type: none"> <li>• Define national needs (public, stakeholders, infrastructure, other).</li> <li>• Establish country-specific factors.</li> <li>• Review the relevance of existing objectives.</li> <li>• Incorporate national characteristics (politics, geography, economy).</li> <li>• Use the UN's Sustainable Development Goals as a supporting framework.</li> <li>• Identify revised strategic objectives.</li> </ul>
<b>2. Assess needs</b>	<ul style="list-style-type: none"> <li>• Conduct a multi-factor, cross-sectoral needs assessment that analyses sectoral needs and trade-offs:               <ul style="list-style-type: none"> <li>- Assess the needs of stakeholders, infrastructure and the economy.</li> <li>- Assess the current performance of infrastructure to identify gaps.</li> <li>- Take account of local and regional strategies.</li> <li>- Take account of options for addressing gaps.</li> <li>- Assess impacts: multi-decade and economic.</li> <li>- Assess risks and uncertainties.</li> </ul> </li> <li>• Complete a final assessment and set a baseline.</li> </ul>
<b>3. Develop a strategy</b>	<ul style="list-style-type: none"> <li>• Define a national approach to developing a strategy.</li> <li>• Consider no-build, retrofit and repurposing options.</li> <li>• Consider coordination with subnational or sectoral plans.</li> <li>• Consider funding and financing options.</li> <li>• Consider capacity, skills and training needs.</li> <li>• Outline milestones for evaluating success.</li> <li>• Identify risks to implementation.</li> <li>• Develop the strategy.</li> <li>• Consult on the strategy.</li> </ul>

**Question 1:** Could you explain how your government department has applied this three-step process, and do you know of any other governments or government departments applying this well?

**Question 2:** Is there anything missing from the sub-steps? What examples can you give to show why these missing elements are important?

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## What do governments need to know about the enabling environment?

An enabling environment is a supporting context within a country that helps to shape the development and implementation of a strategic plan. It includes decision-making powers, institutional arrangements, regulation and influential stakeholders.

Enabling environments are different in each country and influence the development of a strategic planning approach differently.

In order to set up a robust strategic planning process, the critical factors listed in the box below should be acknowledged and understood *before* engaging in the three-step strategic planning process.

### *Overview of critical factors that constitute the infrastructure enabling environment*

Awareness of the following is required before steps are taken to develop a strategic plan:

- government stakeholder responsibilities
- asset ownership and service provision
- budget and funding processes
- how decision-making around infrastructure is structured
- appetite for infrastructural change
- institutional and decision-making structures
- leadership capacity
- legal basis for decision-making (including the regulatory environment) and accountability
- previous or existing activities to strategically plan infrastructure
- government decision-making capacity
- cross-government coordination
- stakeholder involvement in state-based initiatives, including credible expert input
- data and its accessibility
- existing infrastructure performance
- access to resources (capacity, skills, time, money)
- access to financing and funding.

**Question 3:** How does your country's enabling environment (government stakeholder responsibilities, institutional and decision-making structures, and political dynamics) affect long-term planning, and why?

**Question 4:** Which three factors of the enabling environment are the strongest in your country's current strategic planning process, and which three are weakest?

**Question 5:** What would you add to our list of critical factors for the enabling environment, and why?

## What do governments need to know about supporting factors?

The three-step process can be set up in various ways depending on the enabling environment and dynamics at play in the country in which it is being used.

Global practices and ways of working can offer insights into the many ways that supporting factors can help to create a robust strategic infrastructure planning process.

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Table 2 offers an overview of supporting factors which can be supplemented by exemplary cases to enable stakeholders to set up and action their three steps in ways that make the most of the enabling environment. Our self-reflection assessment (see pages 7 and 8) can also signal where further work is needed to enhance or strengthen preliminary work before a strategic plan is set up.

Throughout the development and refining of a national strategy, the following factors can be used to tailor the three-step approach to strengthen infrastructure strategic planning (Table 2).

**Table 2: Overview of supporting factors that can be used to complement or strengthen strategic planning**

Supporting factors	Considerations
<b>Prioritising projects</b>	<ul style="list-style-type: none"> <li>Identify funding and financing opportunities.</li> <li>Identify sustainability measures.</li> <li>Assess all socio-economic costs and benefits of investments, including negative implications and costs.</li> <li>Consider short- and long-term affordability, including taxation and user charges.</li> </ul>
<b>All stakeholders</b>	<ul style="list-style-type: none"> <li>Gain clarity on which outside stakeholders to include.</li> <li>Develop opportunities for gathering insights.</li> <li>Engage outside stakeholders: public, private and civil society.</li> <li>Consult with a broad stakeholder group (e.g. as followed by the National Infrastructure Assessment Phase 2).</li> <li>Develop private-sector guidance.</li> </ul>
<b>Regulation</b>	<ul style="list-style-type: none"> <li>Consider existing laws and taxation structures.</li> <li>Identify where new laws or other forms of regulation need to be put in place.</li> <li>Consider which contract forms to use.</li> </ul>
<b>Data and digitalisation</b>	<ul style="list-style-type: none"> <li>Enhance data quality for decision-making and for informing subsequent iterations.</li> <li>Consider data protection and cyber security.</li> </ul>
<b>Monitoring and evaluation</b>	<ul style="list-style-type: none"> <li>Decide on measures of success.</li> <li>Use benchmarking or other assessments to track progress (where needed).</li> <li>Consult stakeholders on outcomes/progress.</li> <li>Review outcomes against measures put in place.</li> </ul>

**Question 6:** What other topics or themes should be added to the supporting factors, and why?

**Question 7:** How much additional detail would government departments need on the supporting factors to make them actionable?

**Question 8:** Can you provide examples of good practice on the implementation of any of the key elements of the supporting factors? Where possible, please share supporting material or links.



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## What do governments need to know to identify their strengths and weaknesses?

A self-reflection tool can help stakeholders find a starting point for using our guidance.

A benchmarking or self-reflection assessment can help government departments to position themselves in the strategic planning process, understand their progress on setting up a strategy and recognise which supporting factors they must draw on.

It is understood that government departments will use the UN's Sustainable Development Goals (SDGs) as a general benchmark for gauging their progress towards achieving sustainable infrastructure.

The following benchmarking or self-reflection matrixes offer examples of what this could look like for setting up strategic infrastructure:

- InfraCompass ranks countries across eight drivers: governance, regulatory, permits, planning, procurement, activity, funding and financial. Ranking is assigned by a score out of 100 for each driver, enabling rankings across countries<sup>4</sup>.
- Project 13 outlines the following criteria as being essential for using the Project 13 guidance on supporting industry-led delivery: capable owner, governance, organisation, integration and digital transformation. Categories are descriptive and show three superlative categories to indicate degrees of progress or activity in relation to others<sup>5</sup>.
- The Benchmarking Capability Tool asks key questions around what steps have been taken to set up a benchmarking system. Answers are divided into the following categories: basic, developing, established, advanced and innovative<sup>6</sup>.

Drawing on critical strengths from the above examples, Table 3 outlines a sample of what a self-reflection tool could look like for our guidance. It sets up principles, questions and responses to help government departments locate where they start using our guidance.

It should be noted that this is a subjective assessment, and responses to these questions will differ based on who completes it. Therefore, the self-reflection tool intends to assist government departments with broadly identifying where further work could be done to set up and strengthen their strategic infrastructure planning process.

Where other stakeholders work in tandem with government department initiatives, this guidance is also helpful for highlighting where action is needed.

It is unlikely that a country will require no further work towards setting up its strategic planning process. It is also unlikely that governments will excel at all principles at all times.

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<sup>4</sup> Global Infrastructure Hub (2023) [InfraCompass Tool](#)

<sup>5</sup> Project 13 (2023) [Project 13 website](#)

<sup>6</sup> Infrastructure and Projects Authority (2020) [Benchmarking Capability Tool Guidance](#)

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**Table 3: Sample self-reflection tool for helping government departments understand their progress on setting up a strategy, understand their progress on setting up a strategy and recognise which supporting factors they must draw on.**

Principle	Question	1/Requires support	2/Requires development or refinement	3/Limited initial work needed
<b>Institutional organisation and national vision</b>	<b>How do you integrate your national vision/agenda into policymaking?</b>	There are no lead government department/s or other bodies with a mandate to plan infrastructure strategically.	The strategy relies on a limited or fragmented set of departments with a narrow operational mandate to plan infrastructure strategically.	Specific government department/s, in association with other stakeholders, respond to a clear mandate to integrate the national vision into existing and new policy and decision-making structures.
<b>Conduct a needs assessment</b>	<b>How do you understand your needs?</b>	Existing data is not used; intuition is relied on to understand needs. Limited structures are in place to gather evidence to understand needs better.	Use is made of some available data gathered through existing systems for data collection that are set up to inform evidence-based decision-making. There is some reflection on data needs, but limited steps are taken to meet these needs. The same methods are followed over time.	Use is made of data gathered through existing structures for data collection that are set up to inform evidence-based decision-making. Data needs are actively reflected on and steps are taken to meet these needs. New methodologies for supporting robust data gathering are incorporated.
<b>Include all stakeholders</b>	<b>How do you incorporate inputs from all stakeholders?</b>	No other stakeholders (e.g. private sector and civil society) are involved in project planning. There are no opportunities for public scrutiny of policies, strategies and plans.	Stakeholders from the private sector or civil society are involved in project planning. Some options for public scrutiny of policies, procedures and plans exist.	Stakeholders from the private sector and civil society are involved in project planning. Opportunities are revisited to ensure balanced insights are used to inform planning. Opportunities for public scrutiny of policies, strategies and plans are used to strengthen outcomes.

**Question 9:** Do principles, questions and subjective categories provide a reasonable basis for building a self-reflection tool, and what would you change?

**Question 10:** Would you include any additional elements in our self-reflection tool, and why?



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## Call for consultation

All questions below refer to the strategic planning and prioritisation of national and regional economic (water and sanitation, waste, energy and transport) and social infrastructure (housing, hospitals and schools). Please provide examples wherever relevant.

Responses can be made by emailing [policy@ice.org.uk](mailto:policy@ice.org.uk) with answers to the following questions.

This consultation runs until **26 July 2023**.

## Questions

### Three-step process

**Question 1:** Could you explain how your government department has applied this three-step process, and do you know of any other governments or government departments applying this well?

**Question 2:** Is there anything missing from the sub-steps? What examples can you give to show why these missing elements are important?

### Enabling environment

**Question 3:** How does your country's enabling environment (government stakeholder responsibilities, institutional and decision-making structures, and political dynamics) affect long-term planning, and why?

**Question 4:** Which three factors of the enabling environment are the strongest in your country's current strategic planning process, and which three are weakest?

**Question 5:** What would you add to our list of critical factors for the enabling environment, and why?

### Supporting factors

**Question 6:** What other topics or themes should be added to the supporting factors, and why?

**Question 7:** How much additional detail would government departments need on the supporting factors to make them actionable?

**Question 8:** Can you provide examples of good practice on the implementation of any of the key elements of the supporting factors? Where possible, please share supporting material or links.

### Self-reflection assessment

**Question 9:** Do principles, questions and subjective categories provide a reasonable basis for building a self-reflection tool, and what would you change?

**Question 10:** Would you include any additional elements in our self-reflection tool, and why?

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## Output

Insights will be analysed to strengthen updates to the EBI guidance on strategic infrastructure planning and prioritisation.<sup>7</sup>

## About Enabling Better Infrastructure (EBI)

The EBI programme was initiated in 2019 under the chair of Sir Michael Bear.<sup>8</sup> The programme delivers on the ICE's longstanding goal to face up to the policy challenges holding government departments back from planning, financing and providing transformative infrastructure.

The programme has already consolidated policymaker insights to support planning infrastructure to meet sustainable development targets through developing the 12 Principles.<sup>9</sup>

We are now drawing on insights outlined in our guidance<sup>10</sup> to foster a collaborative network of national and regional policymakers to strengthen national infrastructure planning in a changing world. Part of this vision includes updating the 12 Principles.

## About ICE

The Institution of Civil Engineers (ICE) is a 95,000-strong global membership organisation with over 200 years of history.

It is a centre of engineering excellence, qualifying engineers, and helping them maintain lifelong competence, assuring society that the infrastructure they create is safe, dependable and well designed.

Its network of experts offers trusted, impartial advice to politicians and decision makers on how to improve lives by ensuring the world has the engineering capacity and infrastructure systems it needs to enable our planet and those who live on it, to thrive.

For more information please contact:

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<sup>7</sup> Institution of Civil Engineers (2019) [Enabling Better Infrastructure report](#)

<sup>8</sup> Institution of Civil Engineers (2023) [Enabling Better Infrastructure programme website](#)

<sup>9</sup> Institution of Civil Engineers (2022) [Enabling Better Infrastructure Scoping Paper](#)

<sup>10</sup> Institution of Civil Engineers (2019) [Enabling Better Infrastructure report](#)