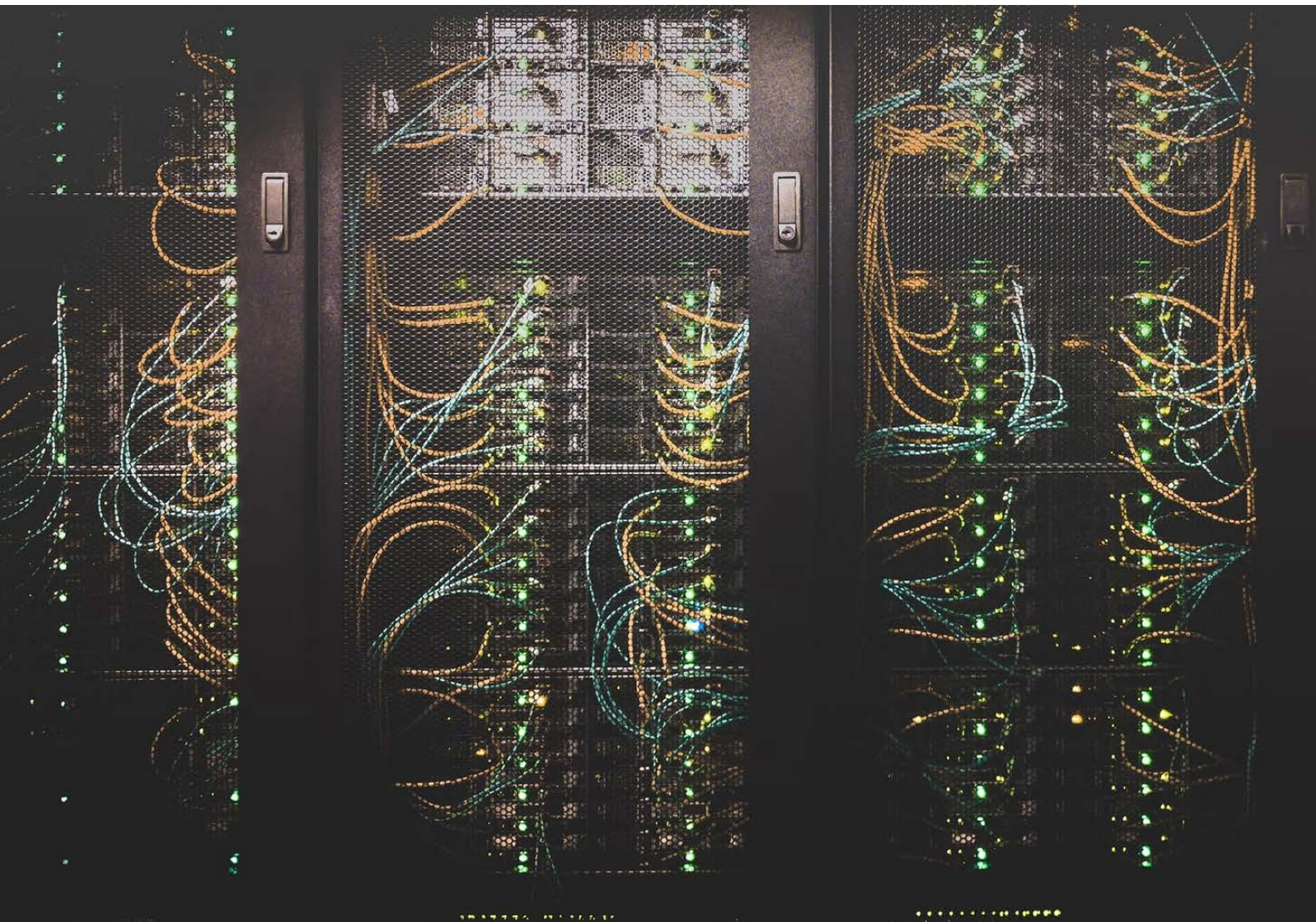




# G20 Blueprint for Scaling Up InfraTech Financing and Development

FINAL DOCUMENT

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# 1 Background and rationale

InfraTech, as a topic for the IWG, commenced during the Saudi Arabian G20 Presidency with the endorsement of the *G20 InfraTech Agenda* by the G20 Finance Ministers and Central Bank Governors in July 2020. InfraTech is defined in this agenda as the integration of digital and non-digital technologies with physical infrastructure to deliver efficient, connected, and resilient assets. The *G20/OECD Report on Collaboration with Institutional Investors and Asset Managers* identifies technology and innovation as one of seven investor proposals to enable a better environment for private sector investment. Furthermore, the *GI Hub's InfraChallenge* innovation competition was delivered under the Italian G20 Presidency in 2021 and was focused on technology for infrastructure resilience and maintenance.

To advance these initiatives, the IWG asked the Global Infrastructure Hub (GI Hub) and the Asian Infrastructure Investment Bank (AIIB) to develop a *G20 Blueprint for Scaling Up InfraTech Financing and Development* (Blueprint). The Blueprint provides a set of evidence-based, voluntary, non-binding actions to advance the six elements<sup>1</sup> in the *G20 InfraTech Agenda* and to enable public and private sector to collaborate and scale up investment into InfraTech. This Blueprint was also developed with input from other 2022 IWG deliverables, including the *Stocktake of Approaches for Scaling Up InfraTech* (Stocktake) under Priority 3 and the *GI Hub Report on Infrastructure Transition Pathways* under Priority 1.

## 2 Scaling up InfraTech Investment

InfraTech has clear potential to achieve long-term infrastructure priorities by: 1) improving efficiency and reducing costs, enhancing economic, social & environmental value, and reshaping infrastructure demand and creating new markets<sup>2</sup>, 2) supporting the *Roadmap to Infrastructure as an Asset Class* by providing enhanced data, tools as well as facilitating investors' ability to make informed decisions<sup>1</sup>, and 3) enabling infrastructure transition pathways<sup>3</sup>.

The G20 can take a leading role in helping scale up InfraTech investment through enablement, by acting as a facilitator of a global InfraTech ecosystem. The InfraTech ecosystem creates the bridge between infrastructure investors and the technology developers, addressing key knowledge gaps in scaling up InfraTech investment and enhancing collaboration between the public and the private sector.

The activities within this InfraTech ecosystem can be grouped into four pillars: **policy, commercial, technology, and finance**. This Blueprint highlights eight opportunity areas across these four pillars and provides 13 voluntary, non-binding actions that can be progressed by G20 partners, in collaboration with the private sector, through the InfraTech ecosystem and/or through the IWG work program.

## 3 Opportunity areas for scaling up InfraTech Investment

To ensure that the Blueprint represents a diverse range of effective approaches across different sectors and jurisdictions, all IWG members were invited, on a voluntary basis, to submit case studies of InfraTech development and financing. To supplement this, the GI Hub launched a global call for submissions in March 2022 to gather approaches from the broader industry. 38 case studies (spanning 16 sectors, 27 countries, and a range of long-term infrastructure priorities ) were gathered through this process and 15 effective approaches to scale up InfraTech investment were derived through the analysis.

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<sup>1</sup> G20 (2020), *G20 Riyadh InfraTech Agenda*, Available at: <https://cdn.gihub.org/umbraco/media/3008/g20-riyadh-infratech-agenda.pdf>

<sup>2</sup> World Bank, 2020. *InfraTech Value Drivers*. Available at: <https://cdn.gihub.org/umbraco/media/3062/world-bank-group-s-reference-note-on-infratech-value-case.pdf>

<sup>3</sup> InfraTech was the second highest infrastructure transition pathway, as observed in G20 governments' long-term infrastructure strategies and plans. Source: GI Hub, 2022. *Report on Infrastructure Transition Pathways* submitted to the IWG in June 2022.

In this Blueprint, eight of these effective approaches were highlighted as opportunity areas for the G20 moving forward. These were selected by taking the most common approach (i.e. the approach that featured most in the case studies) and the most emerging approach (i.e. the approach that featured least in the case studies) under each of the four pillars. The eight opportunity areas are listed in Table 1 below.

**Table 1: Eight opportunity areas to scale up InfraTech investment**

FOUR PILLARS	MOST COMMON APPROACHES	MOST EMERGING APPROACHES
<b>1. Policy pillar</b>	National or sectoral InfraTech strategy (55%)	Innovative procurement tools and policy (8%)
<b>2. Commercial pillar</b>	Innovative delivery models (39%)	New platform for InfraTech ecosystem (11%)
<b>3. Technology pillar</b>	Data platform or digital twin (50%)	Cybersecurity and privacy measures (21%)
<b>4. Finance pillar</b>	Public investment (42%)	Innovative funds, platforms and de-risking mechanisms (5%)

## 4 Blueprint: 13 actions for scaling up InfraTech investment

The eight opportunity areas highlighted in Table 1 were mapped to the InfraTech Elements from the *G20 InfraTech Agenda* and synthesised together with findings from other input reports and existing knowledge to develop the 13 actions in Table 2 below. Several examples of relevant case studies<sup>4</sup> were also provided under each approach.

**Table 2: Blueprint: Eight opportunity areas and 13 actions for scaling up InfraTech investment**

POLICY PILLAR	
<b>Opportunity area:</b>	<b>1. National or sectoral InfraTech strategy</b>
<b>Actions to progress this opportunity could include:</b>	<p>1.1 Map InfraTech solutions and investment activities against national infrastructure plans and strategies to better understand the solutions available and guide investment priorities</p> <p>1.2 Develop guidelines to assist countries in creating national InfraTech strategies and roadmaps in line with their long-term plans and strategies</p>
<b>Expected outcomes</b>	Support policymakers in incorporating InfraTech into long-term infrastructure strategies, which in turn increases transparency for investors in InfraTech
<b>Case study example:</b>	<b>#8: Madrid 360 Environmental Strategy (Spain)</b> – The Madrid 360 Environmental Strategy provides an overarching strategy to drive the development and deployment of InfraTech to support Madrid’s path to climate neutrality by 2050.

<sup>4</sup> The list of case studies included in Table 2 were selected in accordance with: 1) comprehensiveness of the information provided in the case study, 2) alignment with the eight approaches, 3) diversity in geography, sector and stakeholder type



<b>Opportunity area:</b>	<b>2. Innovative procurement tools and policy</b>
<b>Actions to progress this opportunity could include:</b>	2.1 Analyse the impact of innovative procurement approaches on attracting investment for InfraTech development and implementation 2.2 Develop a stocktake of approaches that incentivise the incorporation of technology into projects throughout the lifecycle
<b>Expected outcomes</b>	Build knowledge by providing evidence to help policymakers make more informed decisions on effective innovative procurement methods and how to implement them
<b>Case study example:</b>	<b>#21: Analytics for renewable energy auctions (AreA) (Argentina)</b> - AreA is an online platform that can change the way renewable energy is procured in developing countries. It introduces a novel solution to design and conduct the entire Renewable Energy Procurement Program (REPP) online.
<b>COMMERCIAL PILLAR</b>	
<b>Opportunity area:</b>	<b>3. Innovative delivery models</b>
<b>Actions to progress this opportunity could include:</b>	3.1 Develop a stocktake of innovative delivery models that result in scaling up InfraTech investment to raise awareness of solutions and accelerate knowledge sharing
<b>Expected outcomes</b>	Build knowledge by providing evidence to help practitioners make more informed decisions on effective innovative delivery methods and how to implement them
<b>Case study example:</b>	<b>#14: CityTaps (Kenya)</b> - This is a prepaid smart water meter solution, integrated with existing mobile money systems, which is leased to water utility providers in developing countries. This enables a water 'pay-as-you-go' delivery model which improves cash flow that can be leveraged for future water network expansion.
<b>Opportunity area:</b>	<b>4. New platform for InfraTech ecosystem</b>
<b>Actions to progress this opportunity could include:</b>	4.1 Facilitate collaboration between educational institutions to develop a model curriculum for InfraTech to train the next generation of infrastructure professionals 4.2 Develop, publish and maintain a digital platform which could be customised and adopted by countries and investors to source and priorities technologies and effective approaches
<b>Expected outcomes</b>	Bridge the skills gap in InfraTech through training and formal education; enabling better collaboration between the public and private sector through better access to data, knowledge and insights
<b>Case study example:</b>	<b>#38: AIIB Infratech Platform (international)</b> – AIIB is developing a holistic platform to scale up InfraTech investments in Asia. Activities are designed to drive Infratech investments tailored to sponsors, investors and financiers: from identifying technology to matchmaking stakeholders, and from capacity building to providing debt/equity financing for InfraTech projects. <sup>5</sup>

<sup>5</sup> This case study is also relevant to the 'finance pillar'

TECHNOLOGY PILLAR	
<b>Opportunity area:</b>	<b>5. Data platform or digital twin</b>
<b>Actions to progress this opportunity could include:</b>	5.1 Develop a stocktake of data platforms and digital twin solutions for infrastructure assets that highlight the benefits from these technologies 5.2 Identify and analyse national digital twin programs to identify the success factors and develop policy recommendations to maximise impact from these platforms
<b>Expected outcomes</b>	Build knowledge around the broader economic and financial benefits of adopting national-scale data platforms and digital twin programs as a solution to attract private investment and enhance capital and operational efficiency
<b>Case study example:</b>	<b>#11: Allego EV Platform (EU)</b> – Allego is an electric vehicle (EV) infrastructure company with 400 million kilometres of network across Europe. Their automated digital platform ensures high availability of their charging infrastructure and allows for scalability of user onboarding, billing, and sourcing of green energy.
<b>Opportunity area:</b>	<b>6. Cybersecurity and privacy measures</b>
<b>Actions to progress this opportunity could include:</b>	6.1 Facilitate collaboration with relevant national institutions to work towards a roadmap to develop data privacy and ethics / AI guidance for the built environment (including infrastructure)
<b>Expected outcomes</b>	Start to progress a collaboration with the relevant national institutions who can offer guidance to policymakers and practitioners on addressing cybersecurity and privacy-related issues
<b>Case study example:</b>	<b>#20: e-Nabiz (Turkey):</b> e-Nabiz system was developed by the Ministry of Health to create an integrated system for the electronic collection of citizens' health data produced by health institutions. Citizens can access all their health information digitally using e-Nabiz.
4. FINANCING PILLAR	
<b>Opportunity area:</b>	<b>7. Public investment</b>
<b>Actions to progress this opportunity could include:</b>	7.1 Aggregate data and analyse the economic impacts of national-level budgets for InfraTech financing and development to make the case for technology-related fiscal measures 7.2 Integrate InfraTech into educational and training programs for public officials and practitioners, aligning these programs with improving project preparation to deliver good InfraTech outcomes for infrastructure
<b>Expected outcomes</b>	Build knowledge by providing evidence and training to help practitioners make more informed decisions on fiscal measures to scale up investment in InfraTech
<b>Case study example:</b>	<b>#30-#33: Energy Strategy 2050 and Sustainability Strategy (UAE)</b> – The United Arab Emirates (UAE) Ministry of Energy and Infrastructure (MOEI) invested in several technology projects through their Energy Strategy 2050 and Sustainability Strategy. These include technologies for sustainable roadway designs and cool pavements.

<b>Opportunity area:</b>	<b>8. Innovative funds, platforms, and de-risking mechanisms</b>
<b>Actions to progress this opportunity could include:</b>	8.1 Develop a stocktake of innovative funds, platforms and de-risking mechanisms being used for InfraTech projects, identify the success factors and impact on mobilising capital into InfraTech
<b>Expected outcomes</b>	Build knowledge of the successful elements from innovative funds, platforms and mechanisms, enabling others to replicate effective models
<b>Case study example:</b>	<b>#26: Trial Reservoir (International)</b> – The Trial Reservoir accelerates technology adoption in the water sector through loans for trials, which minimises risk of piloting new water technology solutions. Isle Utilities operated the program and provides technical support. The loans are only repaid if the trial is a success.