Plan to Accelerate Building Efficiency, Electrification, and Renewable Integration (BEERI)

Axis: 1. Transitioning Energy, Industry and Transport
Key objective: 1. Tripling renewables and doubling energy efficiency
Solution:**Building Efficiency, Electrification, and Renewable Integration (BEERI)**
Host initiative:World Green Building Council – Building the Transition with supporting partners C40 and International Energy Agency (IEA)
Scope:

- Geographic: Global
- Sectoral: Built environment – Construction, new and existing buildings
- Other aspects - Energy efficiency, Renewable energy integration, clean heating, efficient cooling, and clean cooking, Whole life carbon (WLC) reduction, Circular materials and resource efficiency, Climate resilience measures

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Levers assessment: *(each lever is described in the guidance document)*

- **Risk-informed decision-making:** Medium maturity
  - *Rationale: Energy efficiency and electrification are now recognised as foundational to decarbonisation, projected to deliver nearly 70% of buildings-related emissions reductions by 2050 (IEA[1]). Due to their long lifespan, delaying electrification risks locking in fossil fuel infrastructure, committing economies to higher emissions and stranded assets. Meanwhile, surging electricity demand—driven by data centre expansion and urban cooling—underscores the urgency of risk-informed planning to ensure energy resilience and equitable access. BEERI promotes resilience by prioritising the principle of energy efficiency first and diversifying energy sources and enabling demand-side flexibility, reducing exposure to fossil fuel price volatility, grid instability, and climate-related disruptions. However, uptake depends on localised risk modelling and integration into planning systems and a managed reduction in the fossil gas grid to ensure a just transition avoiding and the most vulnerable financially supporting a stranded asset.*
- **Technology shifts:** High maturity
  - *Rationale: Electrification technologies are now commercially viable, increasingly cost-competitive, and central to decarbonisation of the built environment. A prerequisite to electrification is energy efficiency - improving building performance through better insulation, airtightness, and smart design reduces overall energy demand, which in turn allows for the installation of smaller, more affordable electric heating systems—such as heat pumps—thereby lowering upfront investment and operational costs. This foundational approach not only maximises the impact of electrification but also ensures that renewable energy can meet a greater share of demand. Heat pumps deliver **3–5x greater efficiency** than gas boilers[2], while induction hobs transfer **up to 90% of energy** to food—more than double the efficiency of gas systems[3]. Clean energy generation is also more affordable than ever: in 2024, solar PV and onshore wind were **41% and 53% cheaper**[4], respectively, than the lowest-cost new fossil fuel plants. BEERI accelerates deployment of building-integrated renewables, heat pumps, electric cooking,*

energy storage, and smart controls, while supporting market transformation through policy alignment, financing frameworks, and industry capacity building. Supply chain readiness and skilled labour availability remain critical enablers to scale deployment equitably and at pace.

- **Knowledge & Capacity building:** High maturity
  - *Rationale:In 2024, the global network of Green Building Councils (GBCs) delivered 760,000 training hours to 94,000 recipients, advancing technical, policy, and financial literacy across the built environment. Corporate and public sector demand for efficiency and electrification literacy is rising, driven by investor expectations, compliance with net zero design standards, and the growing prevalence of science-based climate goals. Economy-wide investment in renewable energy and energy efficiency has been shown to cut energy bills, boost grid resilience, and create over three times as many jobs per US $1.3 million invested[5]—underscoring the economic and social value of workforce development. GBCs are well-positioned to scale training for clean energy integration, data centre efficiency, and electrification retrofits—ensuring the transition is technically feasible, economically beneficial, and socially inclusive. C40 Networks on Building Decarbonisation and Clean Energy are used as knowledge exchange and capacity building platforms, on building electrification, energy efficiency, building-scale renewables, demand side management and response, development of workforce programmes and more. Mayors demonstrate leadership, adopting advanced timelines for adopting net zero practices in public procurement.*
- **Inclusive decision-making governance & design:** High maturity
  - *Rationale: BEERI's collaborative pathway invites co-design with governments, GBCs, utilities, and communities, ensuring that electrification and efficiency strategies are regionally adapted and socially inclusive. Electrification retrofits offer a direct opportunity to address health and comfort disparities in low-income and marginalised communities. BEERI's approach prioritises equitable access to clean energy and improved indoor air quality, especially in informal housing and underserved areas. Through stakeholder engagement and inclusive governance, BEERI ensures that the transition to a zero-emissions built environment delivers tangible health, resilience, and justice benefits for all.*
- **Standards & Taxonomies:** Medium maturity
  - *Rationale: BEERI aligns with emerging Minimum Energy Performance Standards (MEPS), electrification benchmarks, and renewable integration standards, supporting harmonisation across jurisdictions and integration into green finance taxonomies. Growing corporate demand for clean materials and electrified operations is accelerating the standardisation of net zero building definitions, while public procurement is emerging as a strategic lever to embed electrification and energy efficiency-first principles into market norms. BEERI also supports alignment with clean industry supply chains and performance benchmarks, ensuring buildings are ready to consume clean energy and materials at scale. To strengthen implementation, BEERI will leverage the indicators and metrics developed under the Buildings Breakthrough (BB) to inform standards and taxonomies for energy efficiency and renewable integration. However, standard-setting processes often lag behind innovation, requiring proactive coordination to ensure regulatory frameworks keep pace with technological and market transformation.*
- **Supply:** Medium maturity
  - *Rationale: While electrification and renewable technologies are increasingly available,* ***regional disparities in manufacturing, distribution, and skilled labour*** *pose persistent challenges to deployment. Supply chain maturity varies significantly across geographies, affecting access to clean*

*energy systems, materials, and installation capacity. The rapid growth of high-demand sectors—such as data centres and urban cooling—further accelerates pressure on supply chains and skilled labour markets. BEERI will work to stimulate supply chain readiness through **increased coordination, targeted capacity building, and improved policy and financing frameworks**, ensuring that electrification and efficiency solutions can be scaled equitably and at pace across diverse markets.*

- **Demand:** High maturity
  - *Rationale: Electrification incentives, retrofit and renewable energy mandates, and public procurement are proven, effective demand signals that BEERI actively supports. As buildings accounted for **60% of global electricity demand growth** in 2024—driven by cooling needs and data centre expansion—the urgency to accelerate uptake of efficient electric systems is clear[6]. BEERI will deploy market readiness analysis to identify and address cultural and consumer behavioural barriers, enabling coordinated change campaigns and targeted awareness efforts. These strategies will help unlock consumer demand for electrified buildings, clean energy integration, and energy-efficient technologies, reinforcing the business case for industry and finance to scale solutions.*
- **Public/private finance:** Medium maturity
  - *Rationale: BEERI aims to support the de-risking of investment and remove barriers to capital flows for deep retrofits and building electrification, with strong alignment to global climate finance goals. The ambition loop between policy, finance, and market actors is strengthening, as clean energy investments surpassed fossil fuels in 2024 for the first time since 2016[7]. Ensuring finance flows toward the transformation of a sustainable built environment could unlock and generate US $1.8 trillion in value by 2030, reinforcing the economic case for action. Blended finance and public procurement are unlocking new funding streams for electrified buildings, but financing instruments and risk mitigation tools—such as guarantees, concessional capital, and performance-based investment models—require wider adoption, especially in emerging markets (IEA, Financing Clean Energy Transitions).*
- **Partnerships and collaboration:** High maturity
  - *Rationale: BEERI is designed as a flagship collaborative platform, engaging governments, industry, finance, and civil society to accelerate the transition to zero-emissions buildings. It builds on WorldGBC's convening power and leverages the strength of other leading entities in Activation Group 1 to deliver collective impact across regions and sectors. BEERI promotes structured public-private collaboration to mobilise capital, share risks, and use public procurement as a strategic tool to guide markets toward energy efficiency and electrification. It also **leverages the private sector's unique implementation capabilities to accelerate deployment of proven energy efficiency technologies**, fostering long-term collaboration across value chains and with public actors to unlock funding and scale impact. Partnering with organisation like C40 Cities, that work at the local government level and can set up policies, support programs, incentives and capacity building programs, will further accelerate action. Public private partnerships will play a key role in deploying heat pumps at scale, which are seen as one of the most important climate technologies. Partnerships to deploy electrification and energy efficiency in public housing will lead to amplified benefits for the most vulnerable.*
- **Policy & regulatory:** Medium maturity
  - *Rationale: BEERI supports the adoption of the **energy efficiency-first principle** in planning, procurement, and financing decisions, ensuring that efficiency is prioritised from the outset—particularly in emerging markets and new developments. It promotes the uptake of **high-impact***

***policy bundles**, including Minimum Energy Performance Standards (MEPS), electrification mandates, and renewable integration requirements, which are essential to accelerate the transition to zero-emissions buildings. BEERI also strengthens **policy coherence across national and subnational levels**, offering technical assistance to support implementation and enforcement. By embedding these measures into regulatory frameworks, BEERI helps create predictable, investable markets and ensures that policy ambition is matched by delivery capacity on the ground.*

- **Public opinion:** Medium maturity
    - *Rationale: BEERI supports the articulation of clear, compelling narratives that build public understanding and support for electrification and energy efficiency, along with their co-benefits. By emphasising the **co-benefits**—including improved health, lower energy bills, and enhanced resilience—it helps shift public perception from technical retrofit to tangible quality-of-life improvement. BEERI enables governments, industry, and civil society to communicate these impacts through coordinated campaigns, storytelling, and community engagement—ensuring that the transition is not only technically sound but socially resonant and publicly endorsed.*

Expected impact of this plan on the 2030 targets (if any): High

Building Electrification, Efficiency and Renewable Integration (BEERI) initiative positions buildings as a frontline engine of the clean industrial future. As the world transforms how it produces materials, chemicals, and fuels, BEERI ensures the built environment is ready to consume clean energy, reduce demand, and unlock resilient, low-carbon growth. It also ensures that the built environment plays its crucial role in offering flexibility in every changing power grid with additional new renewable capacity and reduce the need for peak plants, which are most commonly fossil fuel based. Buildings are not passive recipients—they are active enablers of the global energy transition, capable of delivering nearly 70% of buildings-related emissions reductions by 2050 through electrification and energy efficiency (IEA Net Zero Scenario). They are also key to ensuring the achievement of the COP28 goal of doubling global energy efficiency progress this decade.

In 2024, buildings drove electricity demand growth four times faster than in 2023, accounting for ~60% of total growth, outpacing industry and transport. Clean energy investments surpassed fossil fuels for the first time since 2016, with solar PV and wind now 41–53% cheaper than fossil alternatives. The private sector is stepping up: 63% of publicly listed companies now have net zero target.

Led by WorldGBC, C40 and IEA, BEERI defines sectoral sub-targets, aligns national and subnational policies, mobilises blended finance, and embeds transparent MRV systems. It supports governments and industry in accelerating electrification and deep efficiency retrofits, while ensuring measurable contributions to the 2028 Global Stocktake goals. BEERI promotes the adoption of high-impact policy bundles—including MEPS, electrification mandates, and renewable integration requirements—and supports policy coherence across national and subnational levels, with technical assistance for implementation.

Together, BEERI will help countries capture a US $1.6 trillion clean industry opportunity, creating new jobs, strengthening supply chains, and securing energy and food systems. With interim 2030 goals to cut energy intensity by 35%, operational emissions by 50%, and embodied carbon by 40%, BEERI aims to ensure all new buildings are zero emissions and resilient by default. Ensuring finance flows to the transformation of a sustainable built environment could unlock an additional US $1.8 trillion in value by 2030, while each dollar invested in energy efficiency yields US $2–$4 in benefits, including energy savings and improved health[8].

Economy-wide investment in renewables and efficiency can cut energy bills, boost grid resilience, and create over three times as many jobs per US $1.3 million invested.

BEERI will unlock this potential via accelerating building retrofits, deploying proven technologies like heat pumps (3–5× more efficient than gas boilers) and induction hobs (up to 90% energy transfer efficiency), and integrating renewables at scale. It supports international progress on building energy codes, mandatory performance requirements, and improved standards for low-carbon materials and appliances.

BEERI also addresses emerging sustainability challenges, such as the energy intensity of data centres, which consumed ~1.5% of global electricity in 2024 and could reach ~9% by 2050[9]. It also supports grid flexibility. Based on the IEA (2023), in a modern net-zero future, most buildings would be equipped with a range of digital technologies together with energy efficiency measures and on-site renewable energy generation and storage. Such a transformation would not only allow buildings to use energy more efficiently, but also to interact with the grid to limit costly demand spikes. Electricity costs would decline for consumers, allowing them to take more control over their energy use and thermal comfort. It would also ease congestion in the grid and reduce the need for fossil-burning power plants and their related greenhouse-gas emissions. BEERI prioritises health and equity, recognising that homes with gas stoves have 50–400% higher nitrogen dioxide levels, increasing asthma risk in children by up to 42%.[10]. Electrification retrofits in low-income and marginalised communities can reduce health and comfort disparities, improve indoor air quality, and deliver justice-based climate benefits.

By leveraging public procurement, blended finance, and private sector implementation capabilities, BEERI fosters long-term collaboration across value chains and with public actors to unlock funding and scale impact. It supports the articulation of co-benefits—health, affordability, resilience—to build public support and shift narratives from technical retrofit to quality-of-life transformation.

Advocacy and Policy Impact by 2028

- 15 additional countries have committed to introducing electrification mandates for new and existing buildings, aligning with energy efficiency-first principles and clean industry readiness.
- 30+ countries, including all EU Member States, have developed or initiated national renovation plans to increase renovation rates to at least 3%, unlocking demand for clean materials and technologies.
- Signatories to the Buildings Breakthrough have endorsed a definition of near zero and resilient buildings that prioritises electrification, energy efficiency, and integration with clean industrial supply chains.
- 40 governments are now using the NDC Scorecard to strengthen energy efficiency and electrification targets, embedding them into national climate strategies and procurement frameworks.
- Cities that have committed to the C40 Net Zero Carbon Buildings and the C40 Renewable Energy Accelerator ensure that buildings fulfil high performance requirements and building-scale renewables are deployed at scale.
- Public procurement guidance aligned with BEERI has been adopted in 10 countries, leveraging purchasing power to accelerate market transformation and demand for clean products.

Industry and Finance-Sector Leadership

- 20+ national decarbonisation and resilience roadmaps co-created by coalitions of industry, policy, finance, and civil society now include explicit targets for building electrification, efficiency, and clean material uptake.
- 3,000+ companies are implementing actions aligned with national roadmaps, including electrification of operations, demand-side flexibility, and procurement of clean industrial inputs.
- 25 financial institutions have integrated BEERI-aligned criteria into lending and investment strategies, supporting the scale-up of building-integrated renewables, electrification retrofits, and energy efficiency upgrades.
- Five regional investment roundtables have been convened to unlock blended finance for building decarbonisation, aligned with the $1.6 trillion clean industry pipeline.
- Clean Industry Demand Alignment Toolkit is being piloted across six sectors, guiding developers and governments to align building codes and procurement with clean industry supply.

2030 Goals

Delivery of this plan makes a major contribution to the implementation of the Global Stocktake (GST) outcomes, namely:

- “Tripling renewable energy capacity globally by 2030” (GST para. 28a)

Contribution: Buildings are crucial enablers for expanding renewable energy—acting as sites for generation, integration, and demand flexibility.

- “Doubling the global average annual rate of energy efficiency improvements by 2030” (GST para. 28a)

Contribution: Buildings are the single largest source of potential energy efficiency gains globally - offering 40% of the gains according to the IEA (IEA, 2023).

- “Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner… to achieve net zero by 2050” (GST para. 28(d)) **Contribution:** By rapidly electrifying building heating and cooking—with tailored solutions for local needs—the sector can lead a just and equitable transition away from fossil fuels, delivering climate, health, and economic benefits worldwide.

Crucially this acceleration also supports the more specific aim of doubling retrofit rates agreed by 49 governments at the 2025 IEA 10th Annual Global Conference on Energy Efficiency. The plan also contributes to the 2030 Climate Solutions, namely the implementation of the Buildings Breakthrough goal “near zero and resilient buildings to be the new normal by 2030”

Output	Action Scope	Action	Type of action	Implementation Lever	Responsible	Time horizon	Stakeholder engagement[1]	Committed Stakeholders
Electrification position paper	Global	Publish a position and guidance paper for electrification of buildings, outlining the case for electrification and addressing concerns and barriers	Existing a…	Knowledge & …	WorldGBC, GBCs and partners	2025	National GBCs and WorldGBC corporate partners	Technical Working Group comprising 9 national GBCs, 4 global partners, WorldGBC, The Climate Group and IEA, C40
National Roadmaps for Decarbonisation & Resilience	National	Work with GBCs and national coalitions developing roadmaps to ensure clear, time-bound targets and actions are set out for electrification, renewable energy and energy efficiency of buildings	Existing a…	Policy & regul…	National GBCs, coordinated by WorldGBC	2025 -2028	Governments, businesses, civil society	75+GBCs
Bi-annual National Industry Status Reports on Private Sector Action and Transition Plans	National	Integrate metrics on electrification, deployment of building-integrated and on-site renewables and energy efficiency into industry progress reporting by GBCs	New action	Demand	GBCs with support from WorldGBC	2025 -2028	Investors, governments, certifiers	12+ GBCs & IEA
Policy Strengthening via Buildings Breakthrough and NDC Scorecard	National & regional	Leverage NDC Scorecard to foster more ambitious policy and NDC targets on electrification, renewables and efficiency. Expand Scorecard use to 40+ governments, deliver 300+ recommendations	Existing a…	Policy & regul…	WorldGBC, GBCs, government partners	2025 -2028	Governments, civil society	19 governments, 800+ stakeholders

[1] Such as countries, companies, investors, cities and local governments, technical institutions, MDBs, regulators & public agencies, utilities & system operators, youth & indigenous groups, multi-stakeholders platform (non-exhaustive)

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Net Zero Carbon Buildings and Renewable Energy Accelerator Reports	Subnational		Existing a…	Knowledge & …	C40	2025 -2028	Subnational and cities	C40
Mapping of taxonomy criteria relating to building energy efficiency to support increased global alignment and interoperability and support deployment of capital.	Global and regional	Support increased alignment of finance instruments with Buildings Breakthrough metrics & sustainable finance taxonomies and foster engagement from financial institutions to integrate relevant BEERI targets and criteria into lending and investment strategies.	New action	Standards & T…	Finance partners, Multilateral Development Banks, WorldGBC	2025 -2028	Investors, governments, certifiers	WorldGBC
Biannual roundtable members of other PASs under Activation Group 1	Global	Biannual roundtable with hosts and partners of other PAS's to ensure synergies, alignment and collaboration	New action	Knowledge & …		2025 -2028	Multi-stakehol…	WorldGBC, IEA, C40 and SE4All, Cool Coalition, Clean Heat Forum (TBC)
			[]	[]		[]	[]	
			[]	[]		[]	[]	

About Us

This PAS is hosted by WorldGBC with both C40 and the International Agency as partner initiatives.

C40

C40 is a global network of nearly 100 mayors of the world's leading cities that are united in action to confront the climate crisis.
Mayors of C40 cities are committed to using an inclusive, science-based and collaborative approach to cut their fair share of emissions in half by 2030, help the world limit global heating in line with the Paris Agreement, and build healthy, equitable and resilient communities. C40 supports mayors to do this by:

- Raising climate ambition through 1.5°C climate action plan support, high-impact accelerators and fostering innovation.
- Building equitable and thriving communities via global and regional programmes.
- Building a global movement through robust international advocacy and diplomacy.
- Scaling up climate action and sharing best practices across high-impact sectors.
- Facilitating access to finance for investment in green jobs and projects that improve resilience in cities

International Energy Agency

The **International Energy Agency (IEA)** is a global authority on energy policy, providing data, analysis, and recommendations to support secure, sustainable, and inclusive energy transitions. Established in 1974, the IEA works with governments and industry worldwide to shape energy strategies that advance climate goals and economic development.

World Green Building Council

The World Green Building Council (WorldGBC) is the largest local-regional-global action network leading the transformation to sustainable and decarbonised built environments.

Together, with over 85 Green Building Councils and industry partners from all around the world, we are driving systemic changes to achieve:
• total decarbonisation of the built environment
• healthy, equitable and resilient buildings, cities and communities
• regeneration of natural systems and thriving circular economy

We work with businesses, organisations and governments to deliver on the ambitions of the Paris Agreement and UN Global Goals for Sustainable Development (SDGs).

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The mission of WorldGBC is to inspire and lead the built environment community to drive local action and create the global momentum necessary for people and planet to thrive.
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Our vision is resilient and decarbonised buildings for a healthy planet and a better future for all.

Annex 1 Expected Impacts

Expected Impact (by 2028)

Advocacy and Policy

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Industry and finance-sector leadership

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- **Clean Industry Demand Alignment Toolkit** is being piloted across **six sectors**, guiding developers and governments to align building codes and procurement with clean industry supply.