

KEY TAKEAWAYS: SECOND COHORT OF ACTION PLANS FOR RAPID POWER SECTOR DECARBONIZATION



Brazil



Canada



United States



Uruguay

Background

A collaborative report from the Clean Energy Ministerial (CEM), [Lessons Learned for Rapid Decarbonization of Power Sectors](#), was delivered to energy ministers and presented at the 13th CEM (CEM13) in the United States in September 2022. As a result, Action Plans for power sector decarbonization were developed by the first cohort of countries. The first cohort included India, Australia, Chile, the European Union, and the United Kingdom. The first cohort's Action Plans were presented at CEM14 in India in July 2023.

These Action Plans, supported by the [21st Century Power Partnership](#) and other CEM workstreams via direct technical assistance and capacity building, are intended to focus on select implementation actions given each country's existing power sector goals and activities, and are an opportunity for countries to display leadership in power sector decarbonization. The second set of Action Plans has been developed by Brazil, Canada, the United States, and Uruguay, released at CEM15 in Brazil in October 2024.

These Action Plans are voluntary, developed by each country individually, not comprehensive of all activities within the jurisdiction, and are living documents that are subject to change.

Common Themes

These Action Plans differ in their approach to power sector decarbonization based on the domestic resources available, governance structure, and regional context, among other factors. Below is a select analysis of the implementation of best practices from the second set of Action Plans, released at CEM15.

The full Action Plans can be found at: 21stcenturypower.org/our-work/action-plans

Planning: Cross-Sectoral Coordination

Brazil: Launched the Amazon Energies Program in 2023 to reduce power generation from fossil fuels and the energy costs in the isolated systems in the Amazon region with the participation of many cross-sectoral actors.

Canada: Identified Indigenous Participation as a key cornerstone to its power sector decarbonization plans and advanced collaboration with provinces and territories via Regional Tables.

United States: Ensured that the critical and non-critical raw mineral and material supply required for power sector decarbonization is acquired through an environmentally sustainable, robust, secure, transparent, and globally cost-competitive industrial network.

Uruguay: Applied the energy circularity concept in a country-scale laboratory to transform surpluses of variable renewable energy into products and processes that contribute to decarbonization, which requires multisector coordination.

Planning: Long-Term Scenario Development

Brazil: Introduced the Nuclear Energy in Brazil National Plan 2050, which aims to standardize projects to achieve scale and incorporate this technology into the country's long-term power sector plans.

Canada: Introduced the Clean Electricity Regulations as a part of its measures from the long-term Emissions Reduction Plan to help drive progress toward a net-zero emissions economy by 2050.

United States: Invested in a power system evolution that enables interconnection of the necessary clean electricity resources through the utilization of state-of-the-art grid technologies and the building of new transmission and generation capacity.

Uruguay: Introduced a roadmap for green hydrogen and its derivatives, anticipating the long-term development of this novel industry in three phases through 2040.

Building: Grid Modernization Actions

Brazil: Introduced a legal and regulatory framework with improvements to interconnect new technologies, including offshore wind, storage, and hydrogen, all of which require grid modernization.

Canada: Developed and launched its Electric Vehicle Infrastructure Program to prepare the electricity grid for wide-spread transportation electrification.

United States: Designated strategic transmission corridors, which unlocks federal financing and facilitates siting for clean energy projects and modernizes the distribution system to enable interconnection of the necessary clean electricity resources.

Uruguay: Increased robustness of the National Interconnected System through distributed generation and the reinforcement of transmission lines (“ring closure”).

Building: Clear Procurement Approaches

Brazil: Used Inova-e data points to grow investment in innovation in the hydrogen value chain. The expectation is that, in the coming years, investments in low-carbon hydrogen will gain even more importance.

Canada: Implemented clear and predictable Investment Tax Credits as the anchor that offers foundational financial support for clean investments and procurement.

United States: Planned to enable microgrids as an option for power sector decarbonization through an advanced microgrid research and investment program.

Uruguay: Energy Efficiency Certificates (white certificates) provide monetary awards to energy efficiency measures in all sectors according to their energy efficiency savings.

Operating: Innovative Market Designs

Brazil: Introduced the Procel Seal of Energy Efficiency, a market certification program designed to promote energy-saving practices and technologies across various sectors.

Canada: Introduced the Clean Electricity Investment Tax Credit for eligible investments as well as low-cost and abundant financing and targeted financing from the Canada Infrastructure Bank and Canada Growth Fund to stimulate the market for clean electricity generation technologies.

United States: Designed and implemented the Market and Retail-rate Know-how for the Energy Transition program to improve energy market design.

Uruguay: Offered incentives to promote load-shifting from peak hours to off-peak hours as well as to increase demand through electrifying uses (cooking, heating, transport, etc.).

Operating: Prioritize All-Asset Flexibility

Brazil: Identified domestic resources that can provide flexibility such as hydropower plants, thermal power plants, and additional resources, considering a framework of effort and impact.

Canada: Funded the Smart Renewables and Electrification Pathways Program and the Smart Grid Program to enhance grid flexibility.

United States: Ensured the continued operation and improved environmental performance of existing variable and non-variable clean power sources, including hydro, nuclear, geothermal, and wind through select programs authorized by the Bipartisan Infrastructure Law (2021) and Inflation Reduction Act (2022).

Uruguay: Implemented the multi-time residential rate in operations to encourage flexible sources of generation.



The full Action Plans and synthesis report can be found at: 21stcenturypower.org/our-work/action-plans

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The 21st Century Power Partnership is a multilateral effort of the Clean Energy Ministerial and serves as a platform for public-private collaboration to advance integrated policy, regulatory, financial, and technical solutions for the large-scale deployment of clean energy in combination with deep energy efficiency and smart grid solutions.

Front page photo: Getty Images 1839917800

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NREL/FS-7A40-91355 | September 2024
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