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Chile "Firm and Flexible" Renewable Energy Virtual Pilot

Executive Summary

Taking advantage of the country's enormous potential for renewable energy, in recent years, Chile has seen massive expansion of intermittent solar and wind resources and has made important strides in upgrading its transmission infrastructure. However, continued growth in intermittent energy will not be sufficient to meet the country's medium- and long-term climate goals. "Firm" energy sources are needed that can deliver reliable power at peak periods and at night, fulfilling services currently delivered by the coal-fired power generation that will be retired by 2040 under Chile's announced decarbonization process. There is also a need for "flexible" energy solutions that can provide reliable power during low-wind and cloudy periods, often at short notice, and to ensure that generated renewable energy can be used and compensated even when transmission constraints prevent power from reaching the country's major population centers. Further, to be consistent with plans for carbon neutrality by 2050, the country may wish to avoid locking in new natural gas-fired power generation.

Accordingly, the proposed virtual pilot project in Chile considers how Article 6 can jump-start investments in "firm and flexible" forms of non-conventional renewable energy (NCRE). Examples include geothermal power and coupling intermittent energy generation with storage solutions, such as solar photovoltaic with battery storage and concentrated solar power with thermal energy storage or pumped hydro. These technologies, while technologically viable, are largely unproven in the country and are not economically competitive with existing and other new resources entering the marketplace. Financing through the international sale of emissions reductions through Article 6 cooperation can be used to bridge this gap.

Building on Chile's existing renewable portfolio standard for NCRE, the proposed cooperation would establish a crediting threshold for "firm and flexible" NCRE electricity generation. Energy companies would be credited for emission reductions from eligible "firm and flexible" NCRE generation above the crediting threshold. To ensure credited emission reductions are additional, the crediting threshold would take into account business-as-usual projections and retirement of the first eight coal plants already announced under the decarbonisation process.

By encouraging "firm and flexible" NCRE, the proposed cooperation would support transformation of Chile's electric sector through a more rapid decarbonisation process and an increased likelihood that new baseload generation coming online will be renewable (rather than natural gas). It is anticipated that this faster progress will likewise support more ambitious Nationally Determined Contributions and meaningful progress towards Chile's long-term climate goals.