

SOUTH AFRICA AND THE 21ST CENTURY POWER PARTNERSHIP

Paving the Way to a Clean, Reliable, and Resilient Power System

Mission and Objectives

Power systems are a foundational element of inclusive economic growth and social development. Integrating these objectives into viable power system policy frameworks is the central challenge of policymakers in the 21st century. The 21st Century Power Partnership (21CPP) serves as an open, collaborative platform for sharing policy and regulatory best practices in the service of power system transformation.

Established in 2012, the 21CPP South Africa Programme is a global initiative that connects South African stakeholders with an international community of expertise. The overall goal of this program is to support South Africa's power system transformation by accelerating the transition to a reliable, financially robust, and low-carbon power system. 21CPP activities focus on achieving positive outcomes for all participants, especially addressing

critical questions and challenges facing system planners, regulators, and operators. In support of this goal, 21CPP taps into deep networks of expertise among leading industry practitioners.

The 21CPP South Africa Programme's primary objectives are to:

- **Accelerate next-generation power system planning** by supporting South Africa's Integrated Resource Plan (IRP), identifying policy approaches to distributed generation and grid codes for large-scale generators, and undertaking a comparison of power planning system tools.
- **Promote various power system modernization efforts** through operational and policy support for grid integration of distributed and bulk power renewable energy, in combination with energy efficiency and smart grid deployment measures.
- **Assist the government of South Africa to build a workforce of power system experts** through dedicated workshops and trainings, staff exchanges, consultations and peer engagements.

About the 21st Century Power Partnership

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 renewable energy in combination with deep energy efficiency and smart grid solutions.

2015–2016 Program Highlights

- In October 2015, 21CPP Executive Director Doug Arent participated in the South Africa International Renewable Energy Conference (SAIREC), hosting an official SAIREC Side Event titled ‘Roadmaps for Power System Transformation: Key Enabling Factors for Variable Renewable Energy Deployment.’ The event brought together stakeholders from around the world to discuss key components for creating an enabling environment for variable renewable energy investment.
- In March 2016, 21CPP hosted two staff from Eskom’s Electricity Planning and Market Development department at the National Renewable Energy Laboratory (NREL) to perform a detailed technical review of Eskom’s Integrated Resource Planning model. The review provided detailed suggestions for model and process enhancement.
 - A follow-on fellowship in September 2016 will work to implement suggestions from the technical review.
- In April 2016, 21CPP organized a public forum in Johannesburg titled ‘Planning for 21st Century Power Systems’ to discuss international experiences and lessons in the next generation of power system planning. The event was co-hosted by the South Africa Department of Energy, the South African National Energy Development Institute, National Energy Regulator of South Africa, Eskom, and the Council for Scientific and Industrial Research.

2016–2017 Planned Activities

Provide Continued Support for South African IRP

Continued ad hoc support for improved modeling fidelity for South Africa’s Integrated Resource Plan.

Partners: South Africa Department of Energy (SADOE), Eskom

Support Foundational Training on Power Sector Modeling

Support regulatory capacity building to interpret results from planning and operational models.

Partners: National Energy Regulator of South Africa

Support Embedded Generation Economic Impact Analysis

Support municipal-level capacity building for tools to quantify the economic impacts of embedded generation.

Partners: National Treasury, South Africa Local Government Association, GIZ, United States Agency for International Development

Assist with Capacity Building on Next Generation Planning Tools

Provide series of technical consultations on best practices to integrate generation and grid planning exercises.

Partners: Eskom

Begin Renewable Electricity Futures Study for South and Southern Africa

Early stage scoping of a phased multi-year evaluation of high renewable electricity futures for South Africa and the Southern African region.

Partners: SADOE, Eskom, Council for Scientific and Industrial Research