

ICTP JOINT SUMMER SCHOOL FOR SUSTAINABLE DEVELOPMENT | 2023

Senegal Energy transition Plan

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1. Context

- 82% of electricity in Senegal is generated from imported petroleum products ;
- There is strategy to diversify the electricity mix (28% renewable energy in 2021) ;

Challenges

Reach 40% renewable energy in the mix by 2030

2. Aim

**Target : 40% of renewable energy in the mix energy by 2030.
(Solar Wind, Hydropower)**



3. Methods & Scenarios

METHODS

Reference Energy system

Modeling and scenario analysis (OSeMOSYS)

Result analysis and policy insights

SCENARIOS

Business as usual (BAU)

Investment in gas power plant

Using natural gas to replace HFO in the electricity production process in 2028

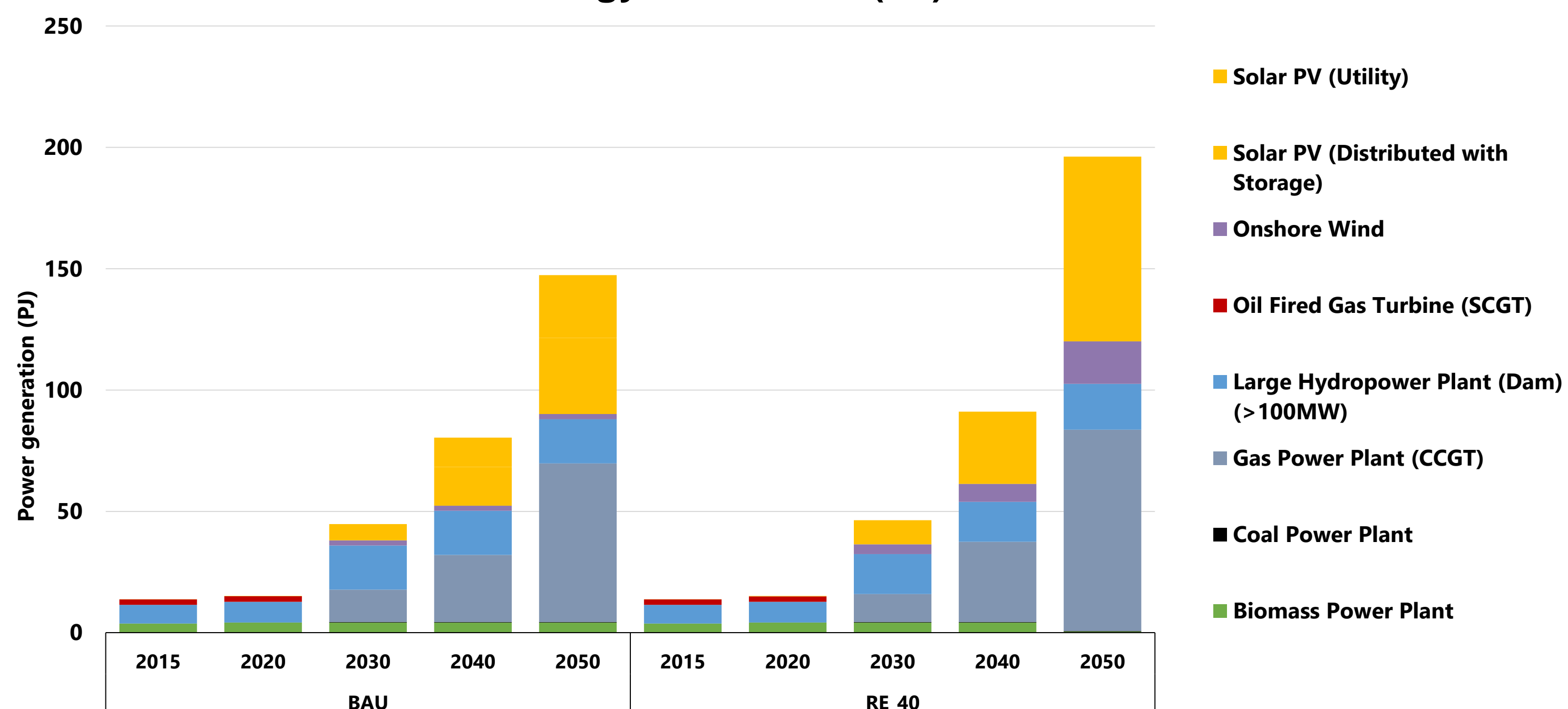
40% percent of renewable energy (RE-40)

40% of renewable energy in the mix

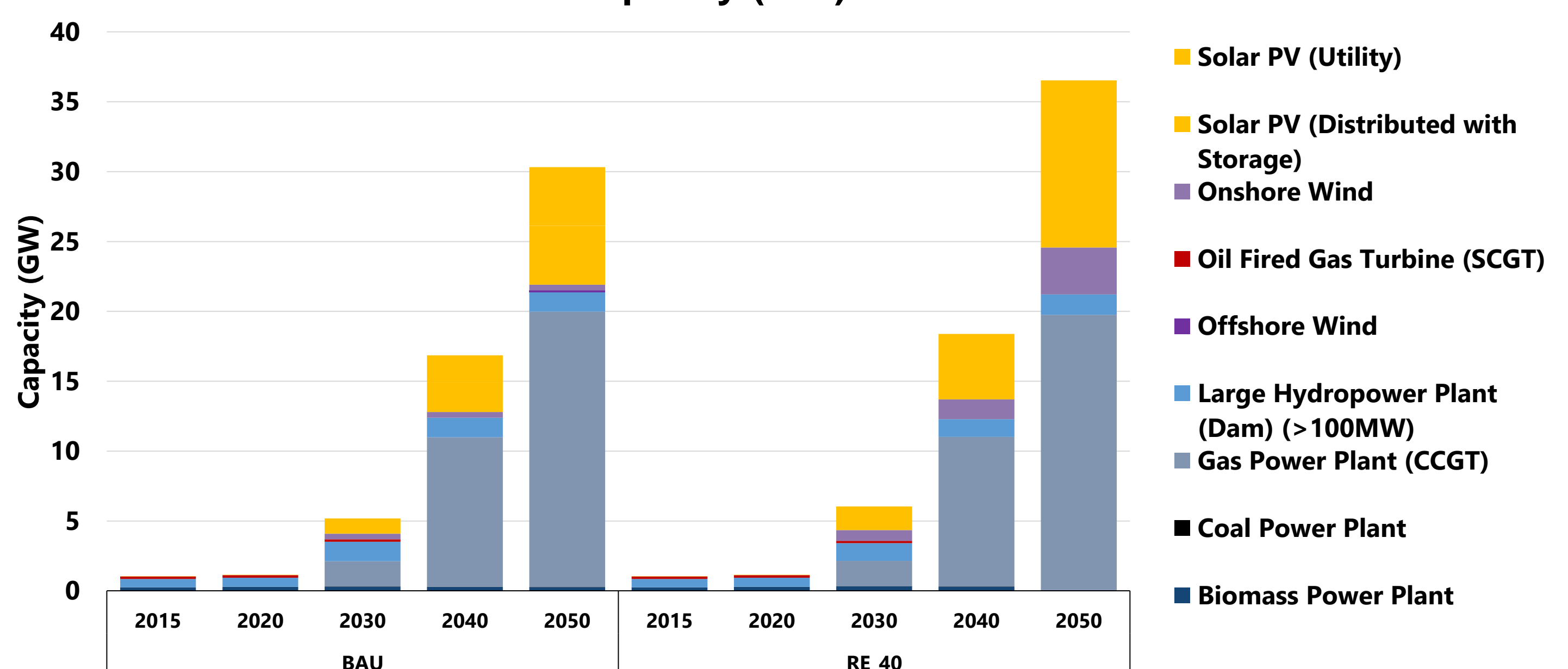
(Solar PV, Wind, Hydro)

4. Results

Annual Energy Generation (PJ)



Installed Capacity (GW)



5. Policy insights, conclusions and future work

- Limit natural gas capacity from 2040 onwards
- Continue to invest in the development of renewable energies such as solar, onshore wind, hydro.
- Set up a favorable policies and regulations, as well as encouraging private investment in the clean energy sector.

Future work

- Calibrate the model to have better results
- Using Flextool
- List recommendations

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A Cost-benefit analysis of Policy, Programs and Projects (C3PO) that is Retrievable, Reusable, Repeatable, Reconstructible, Interoperable and Auditable (u4RIA)