Introduction to NEXSTEP Online Portal and Capacity Building Tool

National Expert SDG Tool for Energy Planning

Virtual Workshop on
Stakeholder Consultation and Capacity Building on the National Expert SDG Tool for Energy Planning (NEXSTEP) for the SDG 7 Roadmap for Armenia

ESCAP

13 May 2024

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

Agenda

- Introduction to NEXSTEP Web Tool
  - Tool layout & components
  - Viewing component results and performing analyses
  - User accessibility and maintenance
- Web Tool Practical Walk-Through
- Capacity building with NEXSTEP e-Learning module

Main Components

https://nexstepenergy.org

ENERGY MODELING

Energy and emissions modelling will help estimate the share of different energy resources, and identify the technological interventions needed to achieve those shares.

ENERGY MODELING

ECONOMIC ANALYSIS

Economic analysis to identify the economically feasible options/interventions.

ECONOMIC ANALYSIS

SCENARIO ANALYSIS

Scenario analysis to determine/identify the policies that are feasible for implementation in the national context.

SCENARIO ANALYSIS

Technology Database

Technology Database allows users to estimate the Economic, Social, and Environmental impacts of different technologies.

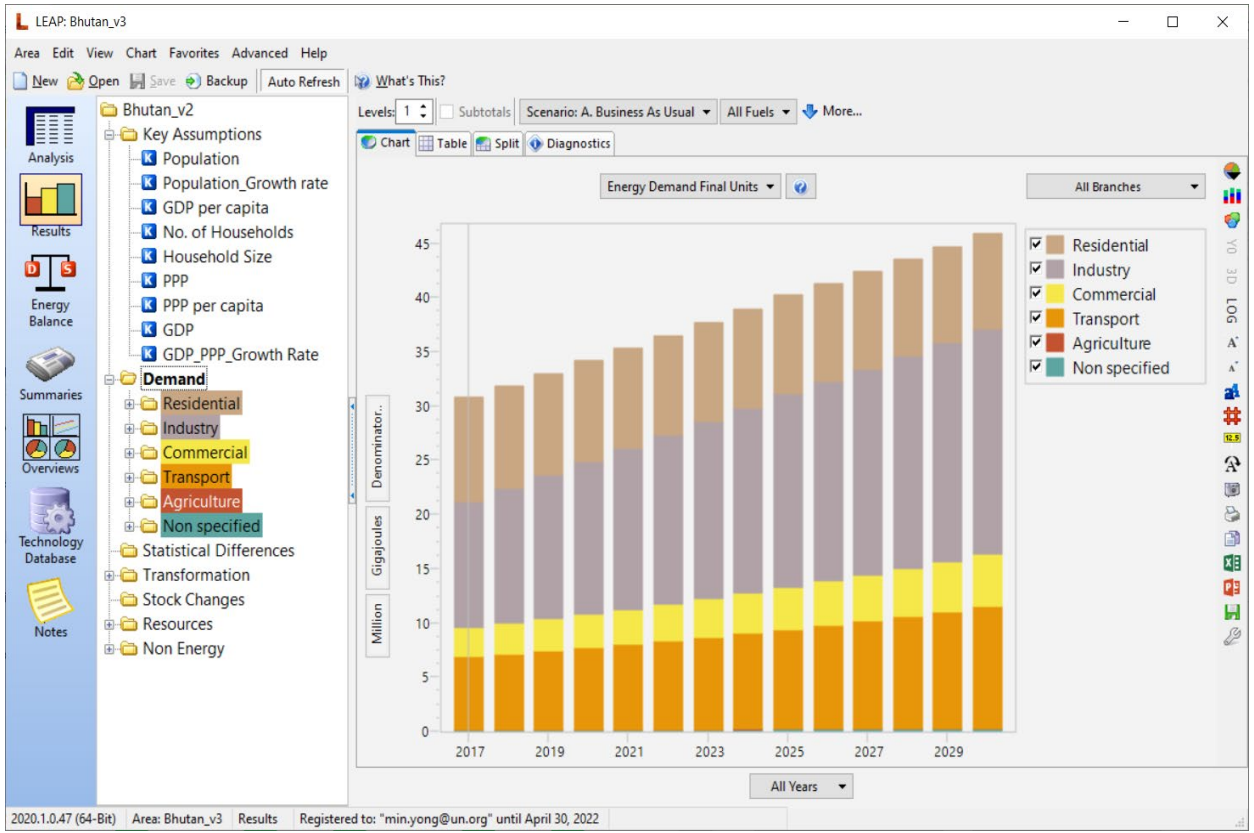
TECHNOLOGY DATABASE

Component 1: Energy Modelling

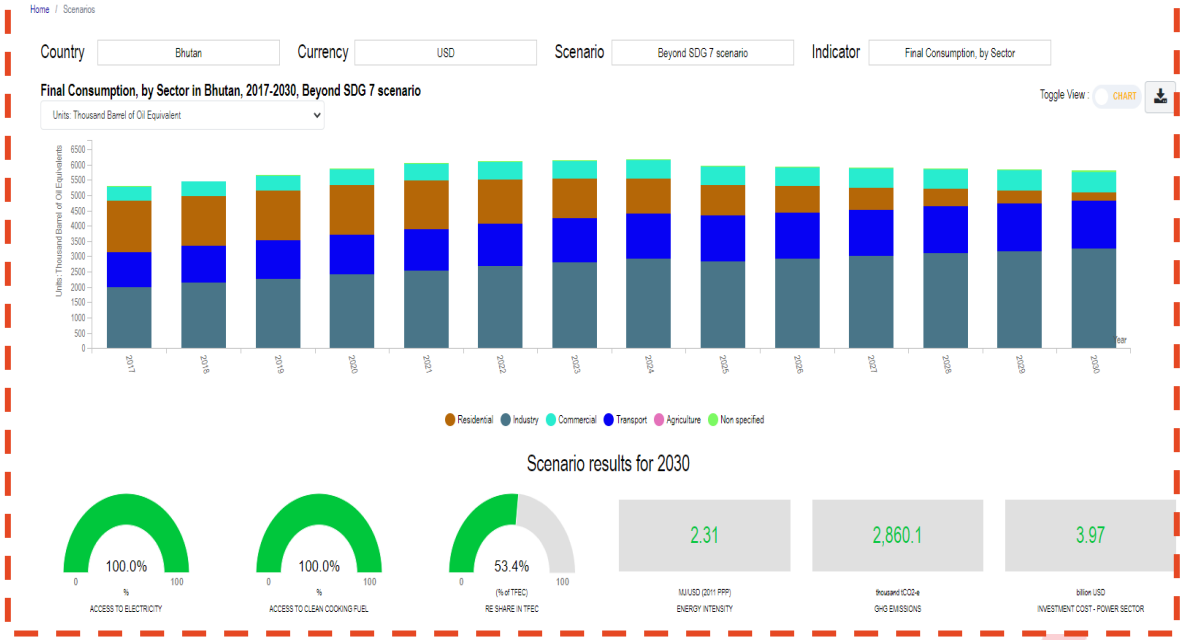
NEXSTEP
National Expert SDG Tool for Energy Planning

Data Collection → **Energy Modelling**

LEAP
Low Emissions Analysis Platform



Results Visualisation on Web Tool



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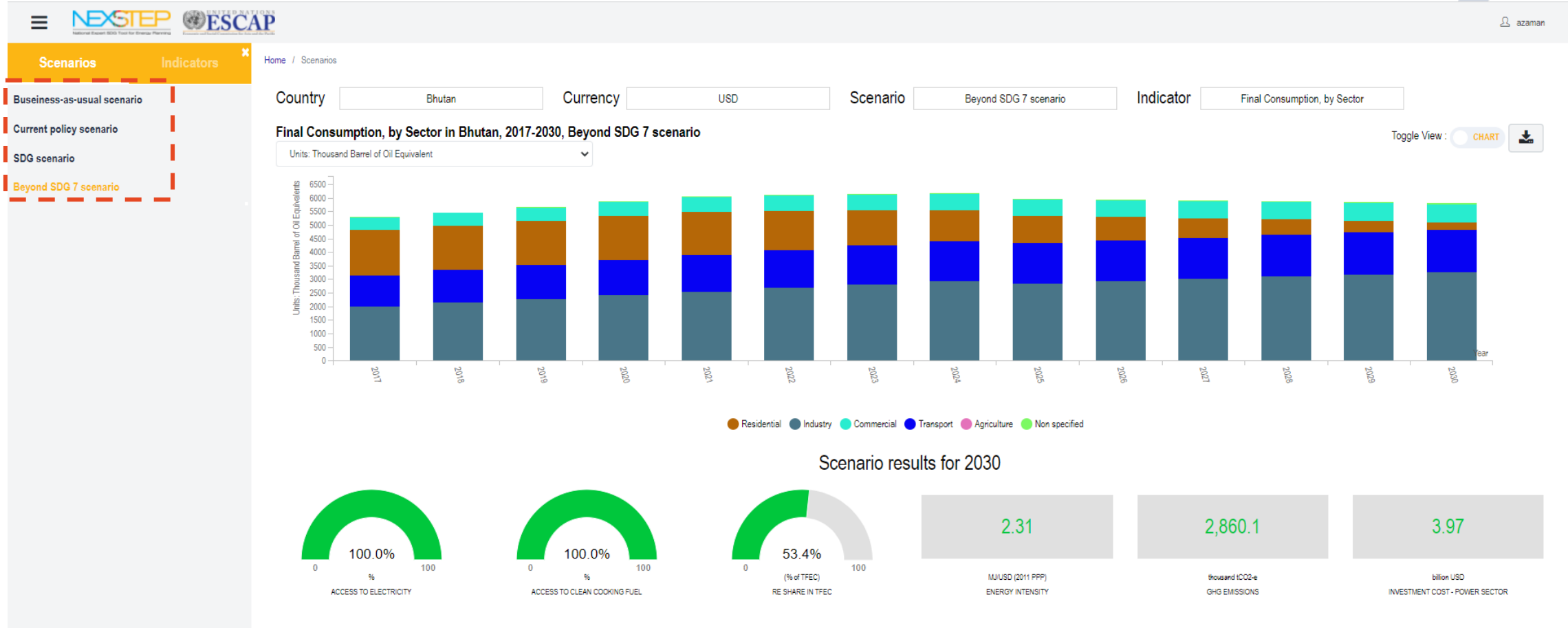
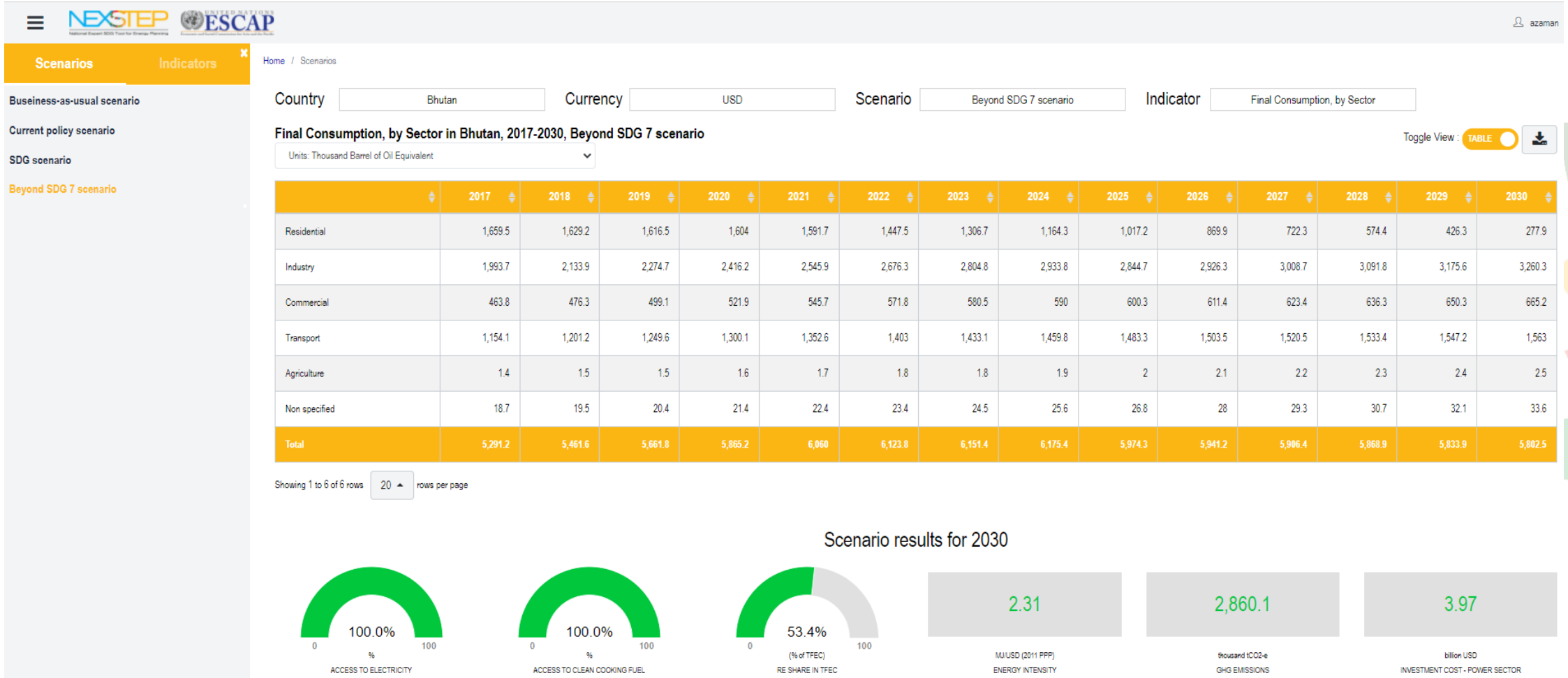
Component 1: Energy Modelling

Toggle between scenarios …



Component 1: Energy Modelling

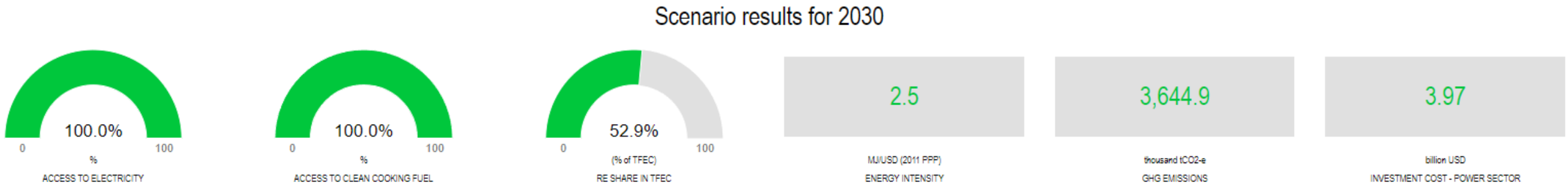
… and indicators.



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential	1,659.5	1,629.2	1,616.5	1,604	1,591.7	1,447.5	1,306.7	1,164.3	1,017.2	869.9	722.3	574.4	426.3	277.9
Industry	1,993.7	2,133.9	2,274.7	2,416.2	2,545.9	2,676.3	2,804.8	2,933.8	2,844.7	2,926.3	3,008.7	3,091.8	3,175.6	3,260.3
Commercial	463.8	476.3	499.1	521.9	545.7	571.8	580.5	590	600.3	611.4	623.4	636.3	650.3	665.2
Transport	1,154.1	1,201.2	1,249.6	1,300.1	1,352.6	1,403	1,433.1	1,459.8	1,483.3	1,503.5	1,520.5	1,533.4	1,547.2	1,563
Agriculture	1.4	1.5	1.5	1.6	1.7	1.8	1.8	1.9	2	2.1	2.2	2.3	2.4	2.5
Non specified	18.7	19.5	20.4	21.4	22.4	23.4	24.5	25.6	26.8	28	29.3	30.7	32.1	33.6
Total	5,291.2	5,461.6	5,661.8	5,865.2	6,060	6,123.8	6,151.4	6,175.4	5,974.3	5,941.2	5,906.4	5,868.9	5,833.9	5,802.5

Component 1: Energy Modelling

Tracking progress towards SDG 7 and NDC



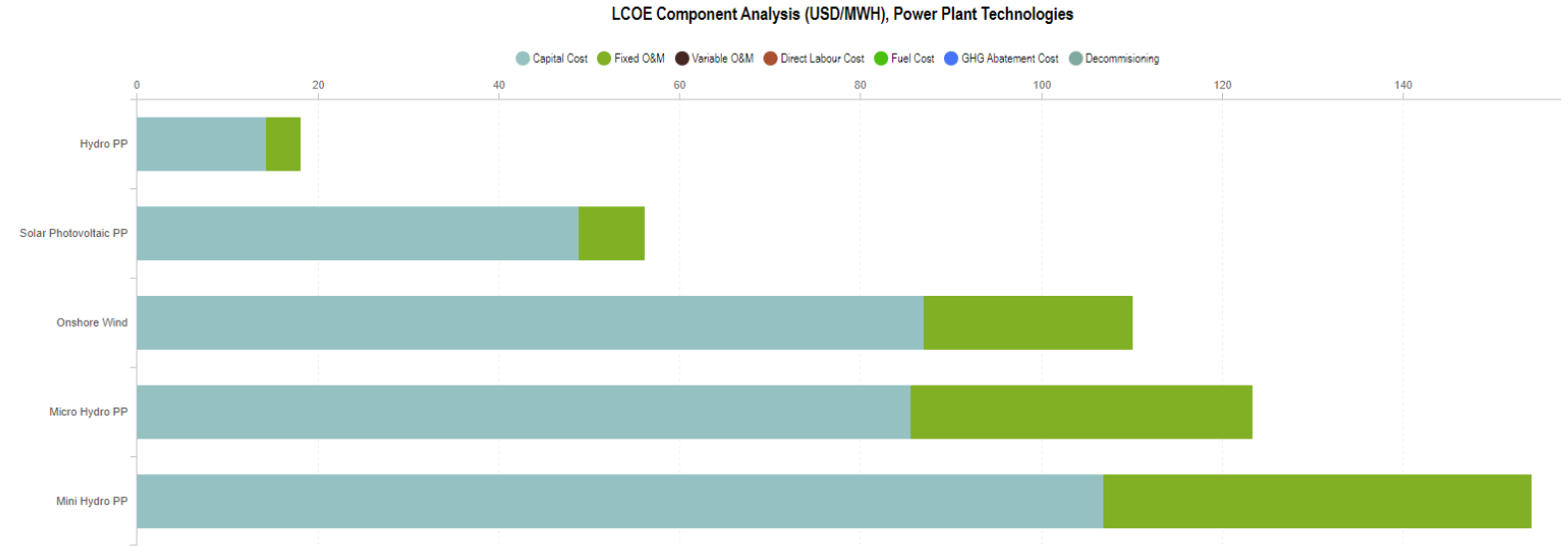
Results for SDG Scenario

Component 2: Economic Analysis

Economic Analysis for Power Technologies (LCOE) and Clean Cooking Technologies (annualised cost)

Country: Bhutan Currency: USD

Economic Analysis For Bhutan



Technologies	Annualized Cost
LPG Stove	147.3
Biogas Digester	131.33
Electric Stove	37.23
ICS	39.9

Results provided in both chart and table format

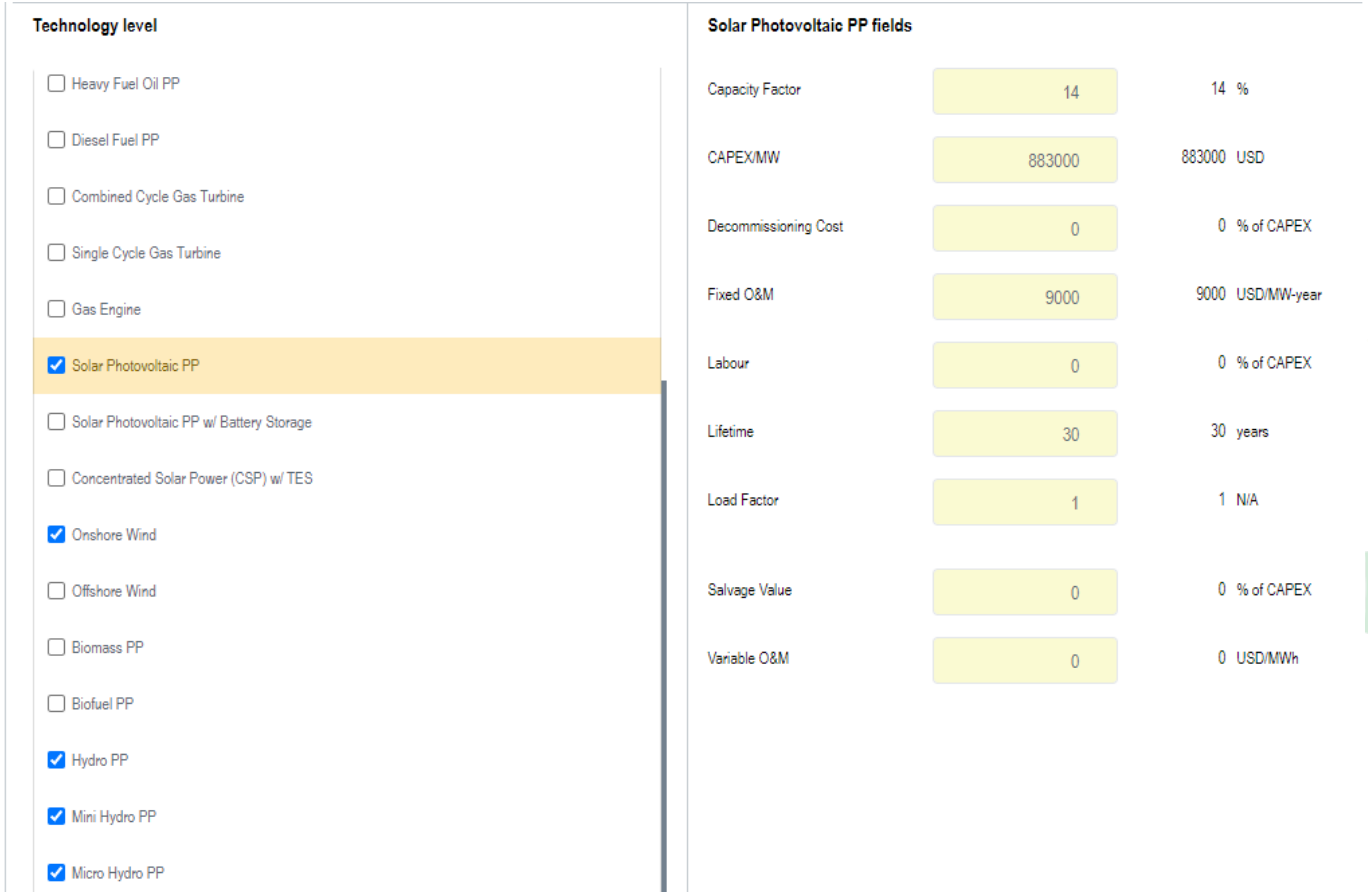
Component 2: Economic Analysis

Data Input for Economic Analysis

Data Input for:

- Basic Parameters (i.e. carbon price, electricity tariff)
- Fuel Prices
- Technological Parameters (i.e. capacity factor, efficiency, CAPEX)

Standalone module

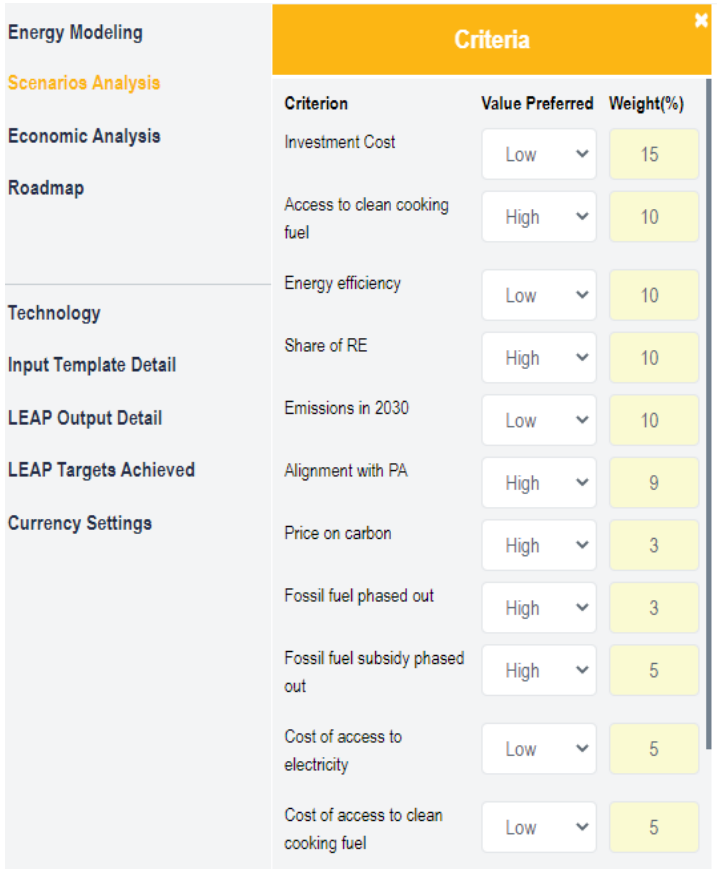


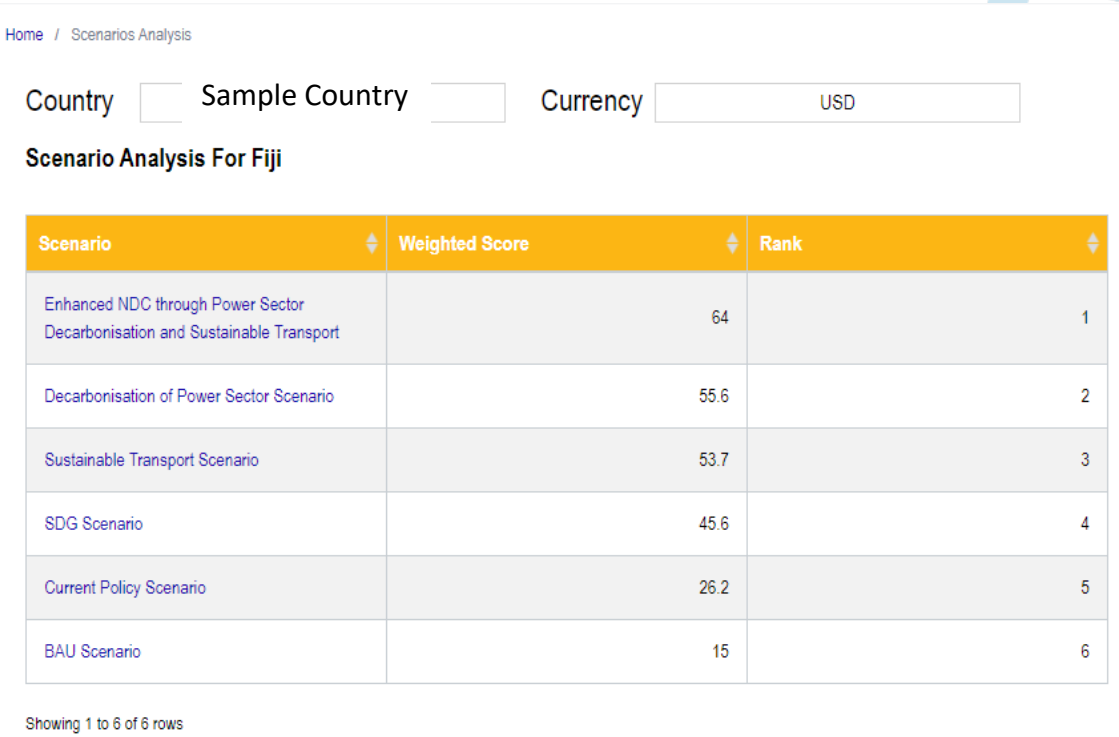
Component 3: Scenario Analysis

Ranking of scenarios based on 12 criteria

i.e. emissions, investment costs, SDG 7 targets achievement

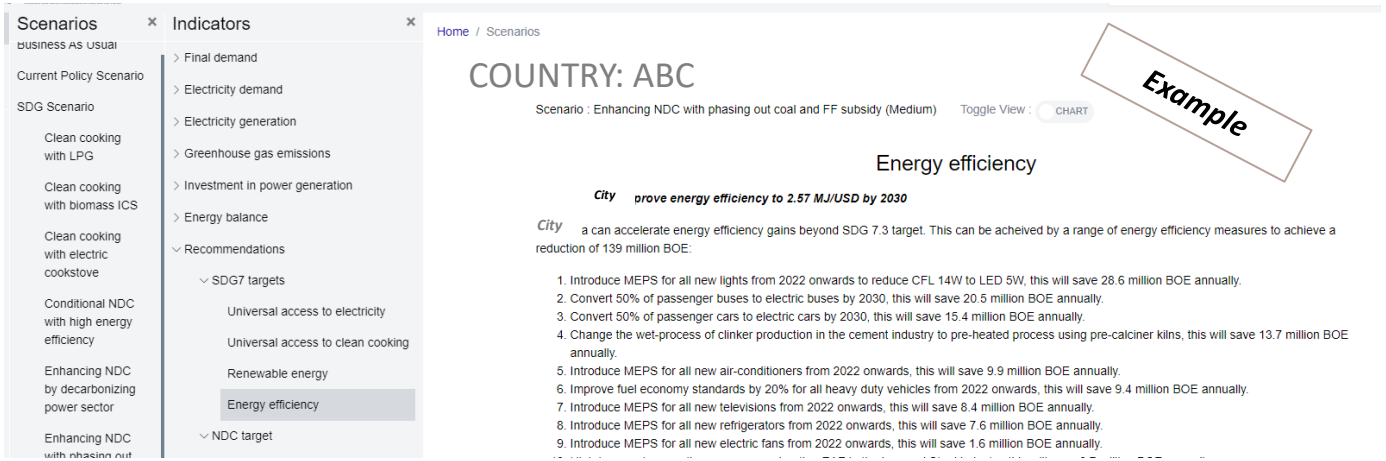
Users are allowed to make changes to the weightage of the criteria



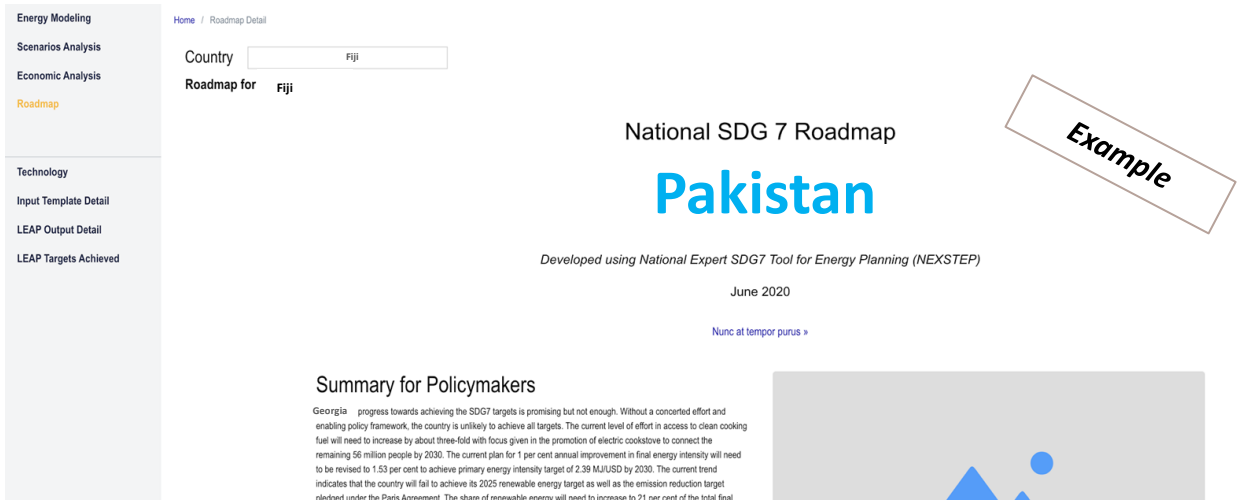


Work in Progress

Policy Recommendations



Roadmap



Conclusion

NEXSTEP web tool :

- Informs about scenario results visualisation
- Provides cost analysis for power and clean cooking technologies
- Enables prioritisation of scenarios to inform future policies
- Provides consolidation of policy recommendations and roadmap

Web Tool Practical Walk-Through

https://nexstepenergy.org/

Workshop valuation

https://forms.office.com/r/FqwDZJCjW1

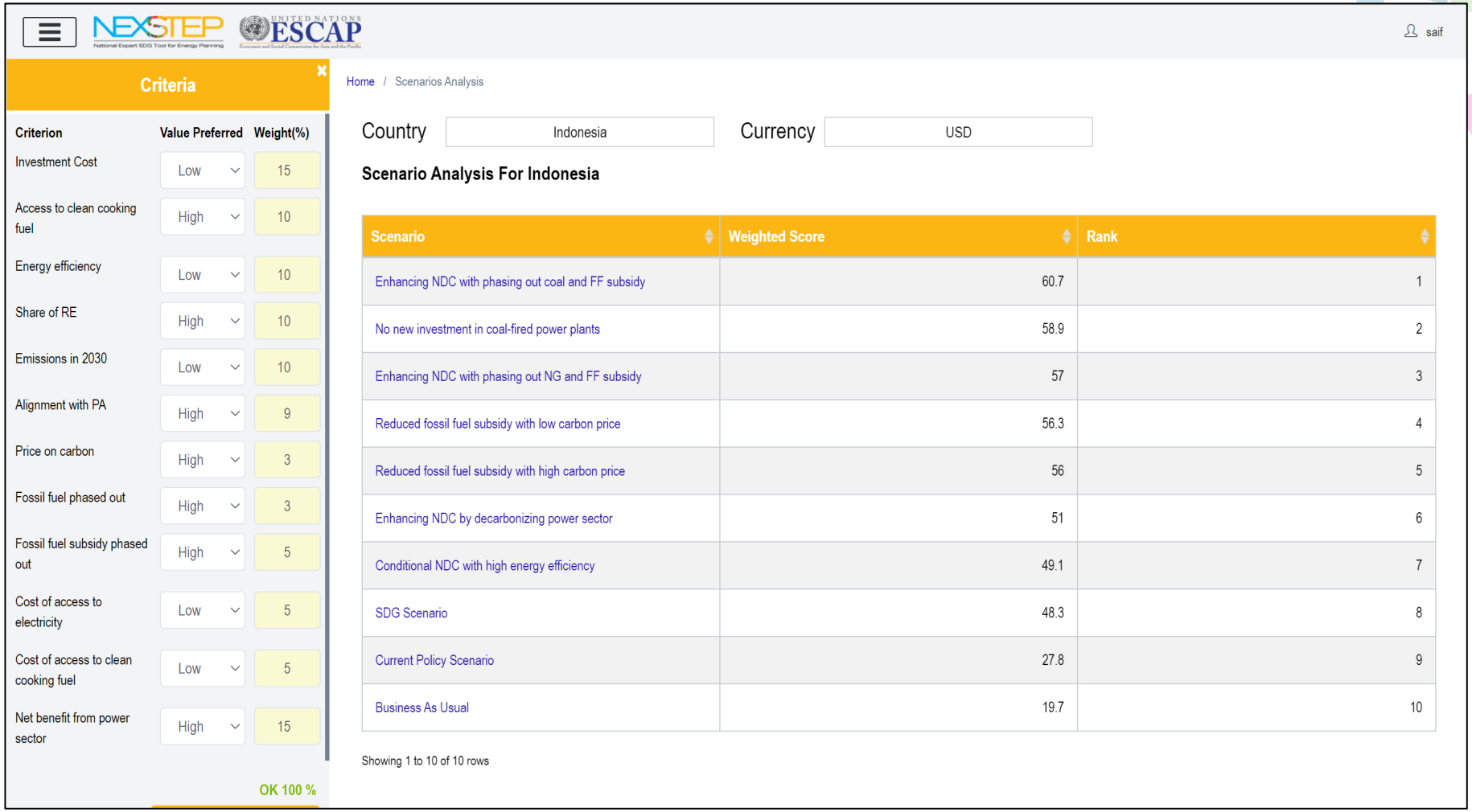
Multi-Criteria Decision Analysis (MCDA) in NEXSTEP

- NEXSTEP applies MCDA to rank scenarios based on the country-specific priorities.
  - To identify which scenario is more important than others and thus prioritizing policy measures
  - To support policymakers in making informed policy decisions by learning economic, social and environmental priorities at local, national and international levels.

The criteria development and weighting is best done in a stakeholder consultation workshop. If deemed necessary, this step can be repeated using the NEXSTEP tool in consultation amongst stakeholders where the participants may want to change weights of each criterion.

How is MCDA used in NEXSTEP?

- The NEXSTEP analysis evaluates scenarios and ranks using the Multi Criteria Decision Analysis (MCDA) tool based on a set of 12 criteria and weights assigned to each criterion.



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Criteria

Criterion	Value Preferred	Weight(%)
Investment Cost	Low	15
Access to clean cooking fuel	High	10
Energy efficiency	Low	10
Share of RE	High	10
Emissions in 2030	Low	10
Alignment with PA	High	9
Price on carbon	High	3
Fossil fuel phased out	High	3
Fossil fuel subsidy phased out	High	5
Cost of access to electricity	Low	5
Cost of access to clean cooking fuel	Low	5
Net benefit from power sector	High	15

OK 100 %

Home / Scenarios Analysis

Country: Indonesia Currency: USD

Scenario Analysis For Indonesia

Scenario	Weighted Score	Rank
Enhancing NDC with phasing out coal and FF subsidy	60.7	1
No new investment in coal-fired power plants	58.9	2
Enhancing NDC with phasing out NG and FF subsidy	57	3
Reduced fossil fuel subsidy with low carbon price	56.3	4
Reduced fossil fuel subsidy with high carbon price	56	5
Enhancing NDC by decarbonizing power sector	51	6
Conditional NDC with high energy efficiency	49.1	7
SDG Scenario	48.3	8
Current Policy Scenario	27.8	9
Business As Usual	19.7	10

Showing 1 to 10 of 10 rows

Setting weight of each criterion

- Please go to **www.menti.com and use the code 3149 7454**
- Users/stakeholders to allocate weights in terms of relative importance of each criterion.
- If a criterion is believed to be not applicable, allocation should be zero
- The total weight needs to be 100 per cent.
- Click submit when done

- The value from each participant will be aggregated automatically

Allocate weights in terms of the relative importance of each criterion. You can put any value

Investment Cost
-10 | 23 | +10
0 points left

Access to clean cooking fuel
-10 | 10 | +10
0 points left

Energy efficiency
-10 | 10 | +10
0 points left

Share of Renewable Energy
-10 | 10 | +10
0 points left

Emissions in 2030
-10 | 12 | +10
0 points left

Alignment with Paris Agreement
-10 | 6 | +10
0 points left

Price on carbon
-10 | 0 | +10
0 points left

Fossil fuel phased out
-10 | 9 | +10
0 points left

Fossil fuel subsidy phased out
-10 | 0 | +10
0 points left

Set zero if you think it is not important/applicable

Cost of access to electricity
-10 | 5 | +10
0 points left

Cost of access to clean cooking fuel
-10 | 5 | +10
0 points left

Net benefit from power sector
-10 | 10 | +10
0 points left

Total value must be 100 (you can see how many point left)