



MINISTRY OF ENERGY IN CHARGE OF NATURAL RESOURCES

DEVELOPMENT STATUS, CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE ENERGY IN DJIBOUTI

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□ OUTLINE OF THE PRESENTATION

1. Overview of the Energy sector

- Policy framework
- Institutional framework
- Legal and regulatory framework
- Current situation
- The challenges facing the electricity sector

2. Roadmap

- Terms of reference
- FR for the implementation of the Djibouti Vision 2035
- Challenges and opportunities
- Priority actions
- FR to achieve the objectives of Vision Djibouti 2035

□ Djibouti in figures...

- **Independence:** 27 June 1977
- **Surface area:** 23,200 km²
- **Population:** 905,618 (2017)
- **Capital:** Djibouti-Population: 70% (650 000 hab)
- **GDP growth:** 7.1% (2017)
- **GDP per capita:** USD 1930 (2017)
- **Poverty rate:** 40%.
- **HDI:** 181st
- **Climate:** semi-arid with rocky volcanic deserts
- **Average annual precipitation:** 121 mm (lowlands) to 300 mm (highlands)
- **Temperature:** max 30°C (October to April) and max 45°C (May to September)
- **Member of :** LA, COMESA, IGAD





Energy policy for DJIBOUTI: General and specific framework

Reliability and security of supply

- Develop a sufficient, clean and robust electricity supply to support the economic objectives of Vision 2035, to make Djibouti an emerging country.

Strengthening and ensuring **energy independence** in terms of electricity supply

Reducing fuel poverty among the population

100% energy green

Integrate domestic renewable energies into the energy mix **Make the power generation sector bankable** to attract private investors

Promoting **energy efficiency**

Reaching the target of 100% renewable generation

Cost reduction

Reduce electricity supply costs

□ Legal & institutional framework of the energy sector

- **Legal framework:**

1. ACT No. 42 reorganising the Ministry of Energy and Natural Resources.
2. LAW NO. 88 regulating the activities of independent producers
3. LAW NO. 90 on the legislative framework for energy efficiency

- **Institutional framework :**

- **Audience:**

- ❖ Ministry of Energy and Natural Resources (MERN) :

- EDD/DE/ADME/DGP

- ❖ Chairmanship:

- Djibouti Geothermal Development Office (ODDEG)
 - Red Sea Drilling
 - Djibouti Multisectoral Regulatory Agency (ARMD)

- ❖ Other stakeholders: CERD, ADDS, Ministry of Agriculture, University, Education, Health, Environment,,,,,

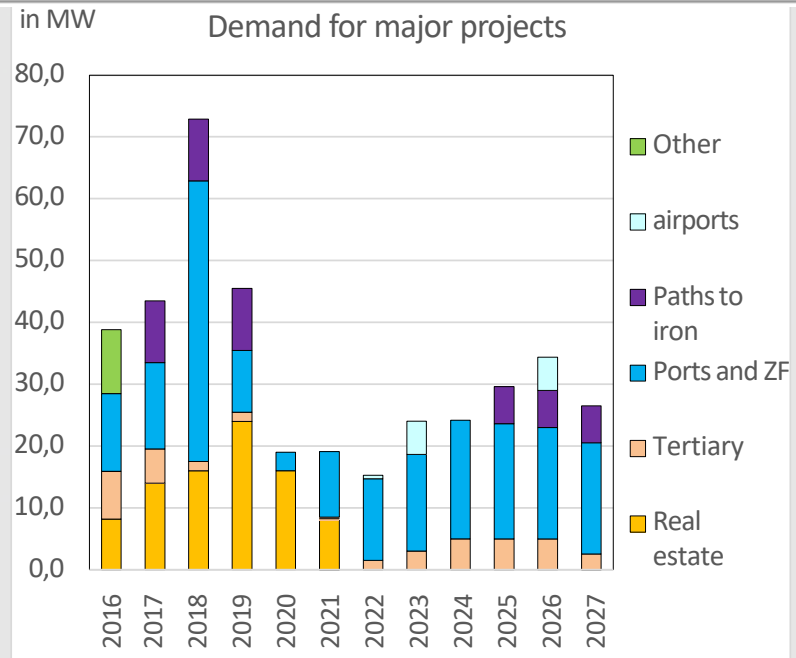
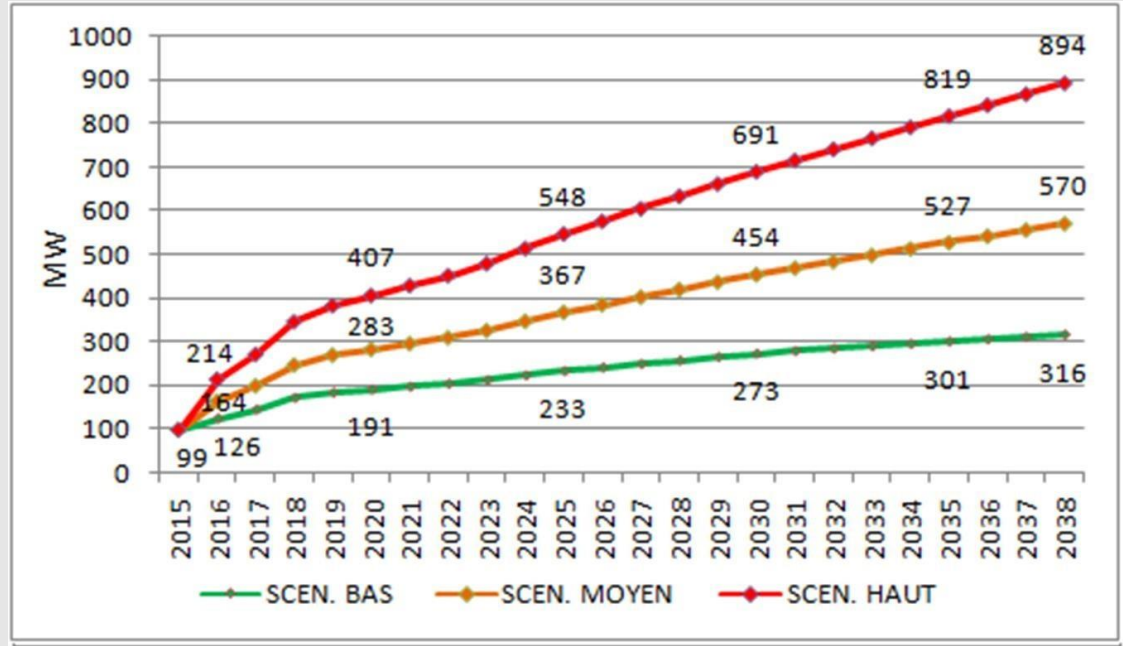
- **Private:** Red Sea Power, AMEA Power,...

□ Electricity sector: Current state

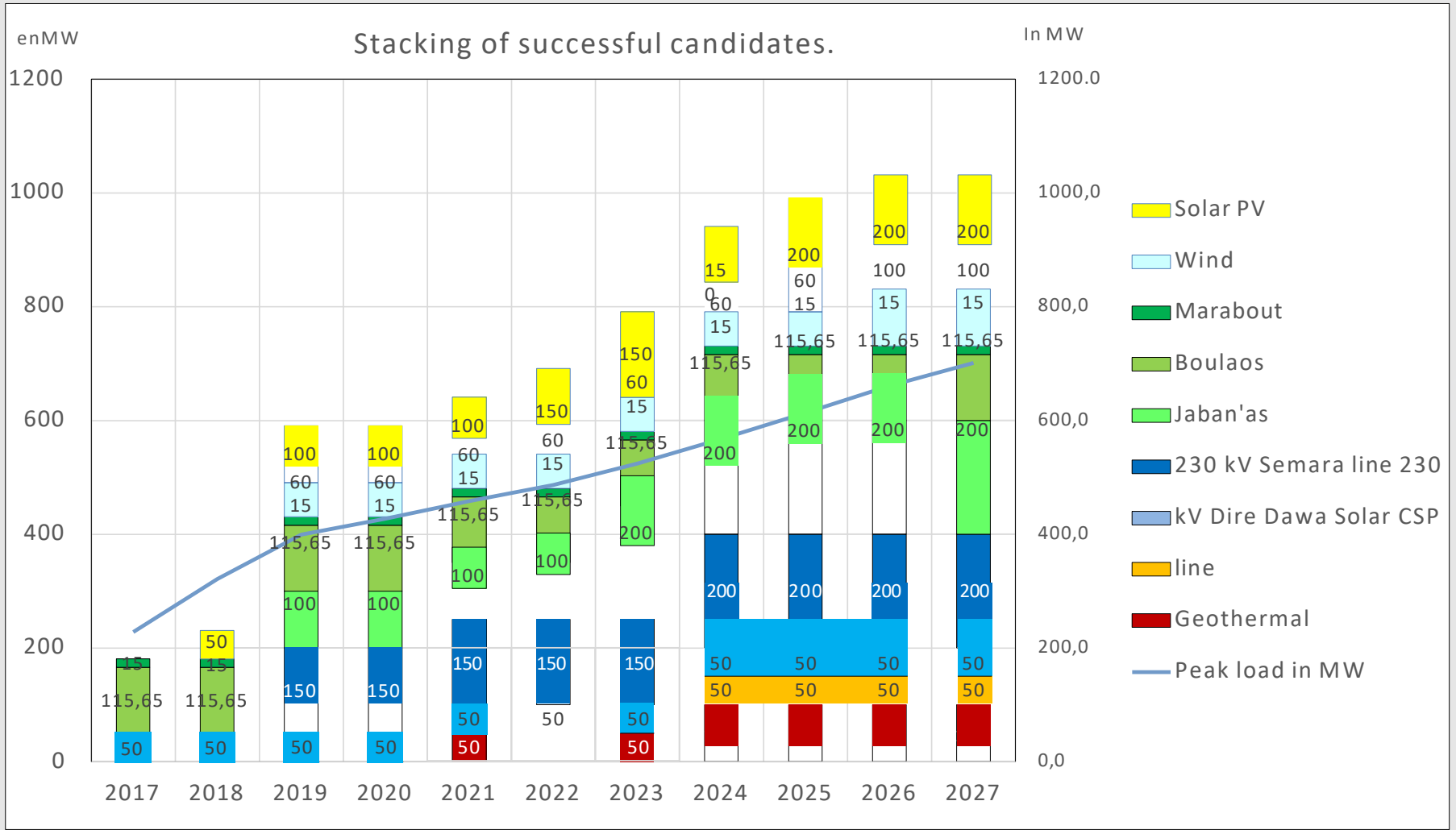
- Djibouti's electricity supply is based on :
 - Thermal generation (diesel and heavy fuel oil): **20-40%**.
 - Hydroelectric imports from Ethiopia (since 2011): **60-80%**.
- The country's current energy production is **220 MW**, broken down as follows
 - Public generation of **120 MW** by EdD
 - **100 MW** of private production by foreign military bases, port and free trade zones, hotels, etc.
- Installed generating capacity - 126.4 MW
- Peak demand - 120 MW
- Average annual growth in workload + 5%.
- Access to electricity in 2022 :
 - 70.3% in the city of Djibouti
 - 20-50% in regions and cities
 - National average: **60.2%**
 - Average cost of electricity (2022): **US\$0.21/kwh**

Electricity sector: Demand multiplied by 5 to 10 by 2027

- Ordinary demand linked to demographics and the economy,
- Extraordinary demand linked to the major infrastructure development programme
- Future demand:
 - 379 to 636 MW in 2022
 - 514 to 941 MW in 2027



Medium-term energy mix projection (2027): Trend in firm capacity installed

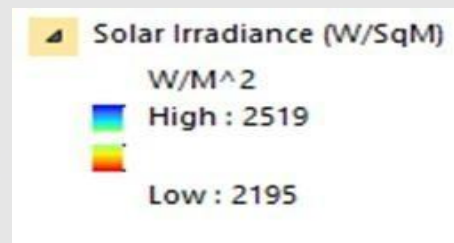
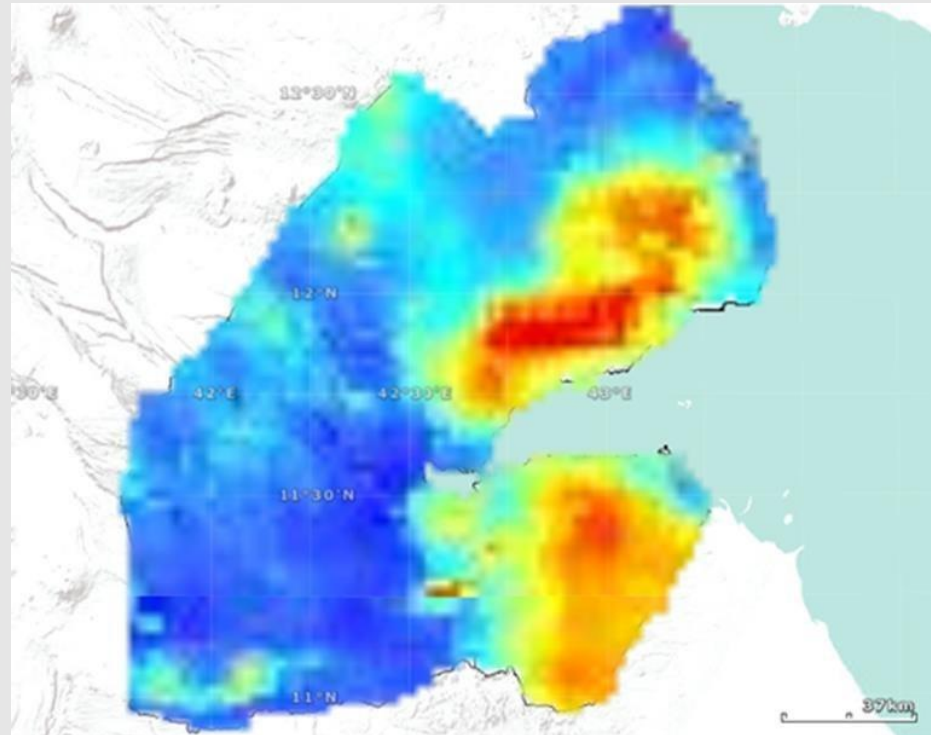




Renewable energy potential

a) Solar energy

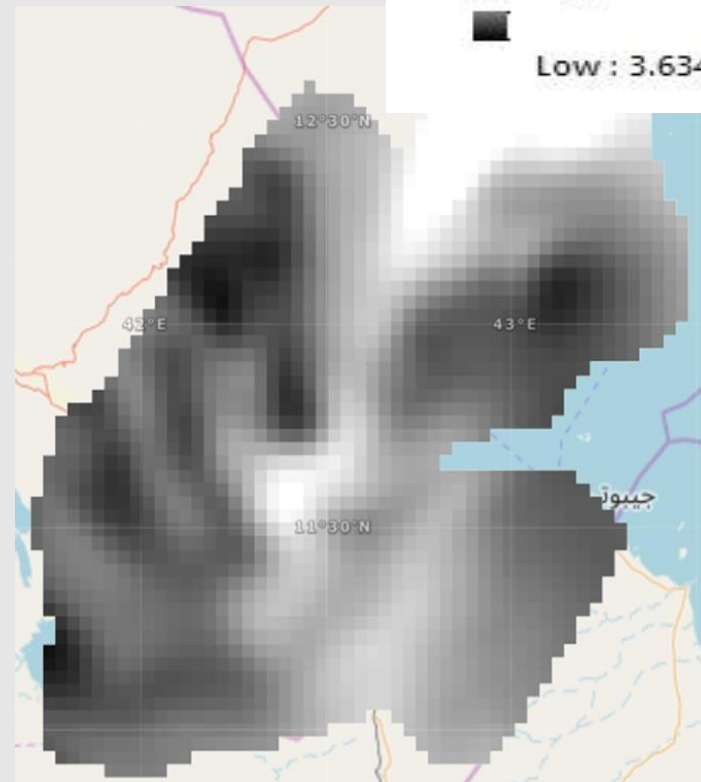
- The level of sunshine at Djibouti is very high.
- It remains high throughout the country (5-6.5 kWh/m²).





b) Wind energy

- Several sites with strong winds throughout the year, with a potential of 4,000 hours.
- The average speed measured is greater than 5 metres per second (m / s).



Potential sites:

Ghoubet (B), Egralayta (A) and Grand Bara (D): 10 to 14 m / s.



C) Geothermal energy

- Potential among the best on the African continent
- This resource can generate a total output of 600 to 1000 MW.



□ National electrification policy: main projects

Technical site:

- Developing geothermal energy
- Mobilise 200 MW of hydroelectric imports by 2020
- Exploiting the opportunities offered by intermittent energy sources such as wind and solar
than solar PV and wind
- Improve the reliability and efficiency of the national electricity network.

Institutional project:

- Create a framework to simplify private investment in the energy production sector

Major energy projects in progress

Description		Stakeholders	Evolution
Grand Bara solar power plant	1st phase of 30 MW	AMEA POWER	MOU, PPA, contract concession
Ghoubet wind farm	60 MW	AFC	Inauguration on 10 September 2023
Geothermal power station	50 MW (1st phase),	ESD	Drilling 2 out of 3 wells
2nd electricity interconnection line	230 KV line I	Ethiopia, Djibouti, India	Fundraising (negotiations with Exim Bank)

□ Sustainable Energy Roadmap for Djibouti

Is aligned with Sustainable Development Goal No. 7 (SDG-7) to "ensure access to affordable, reliable, sustainable and modern energy for all" with its three objectives:

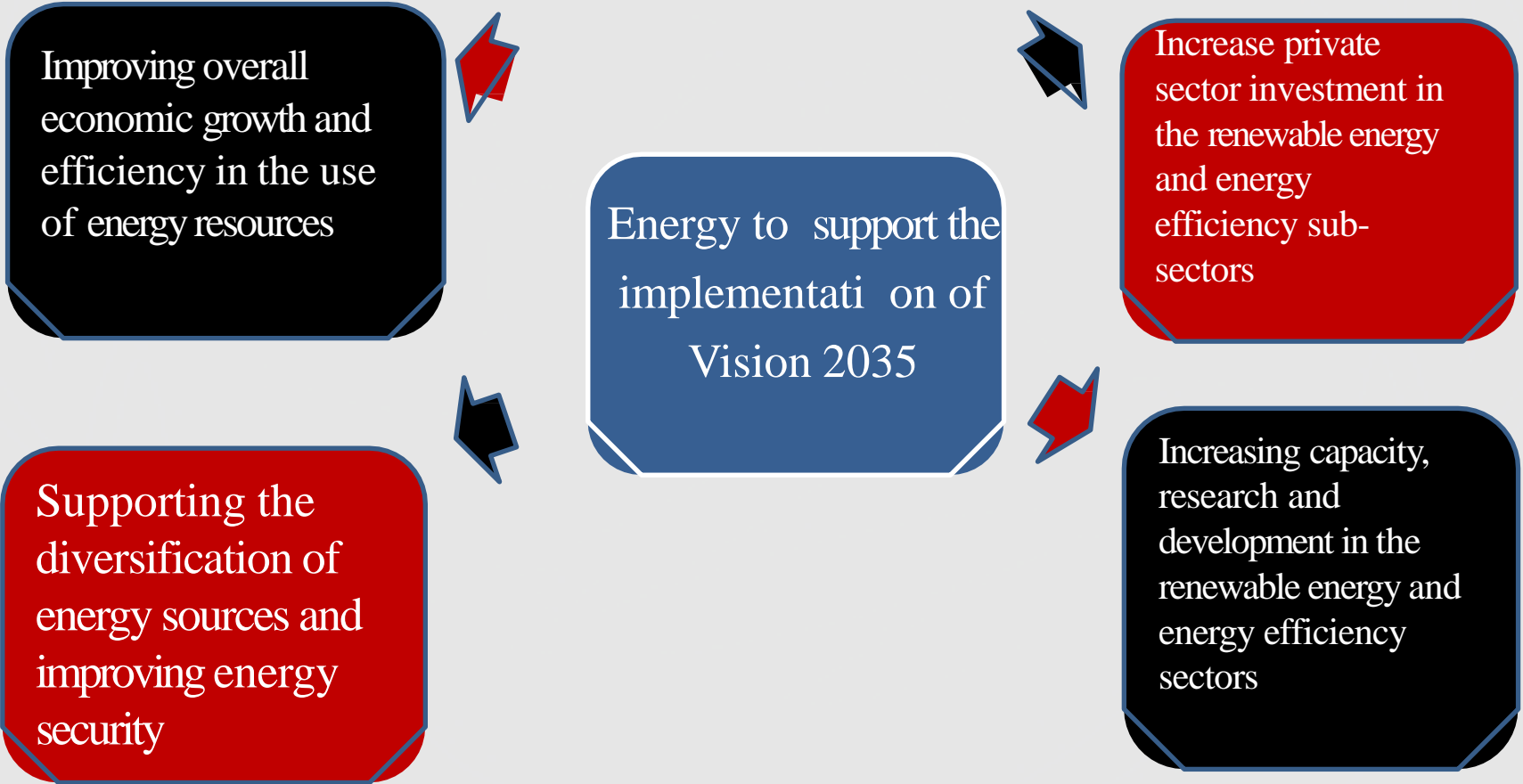
1. Access to affordable, reliable and sustainable energy

2. Increasing the share of renewable energies in the national energy mix

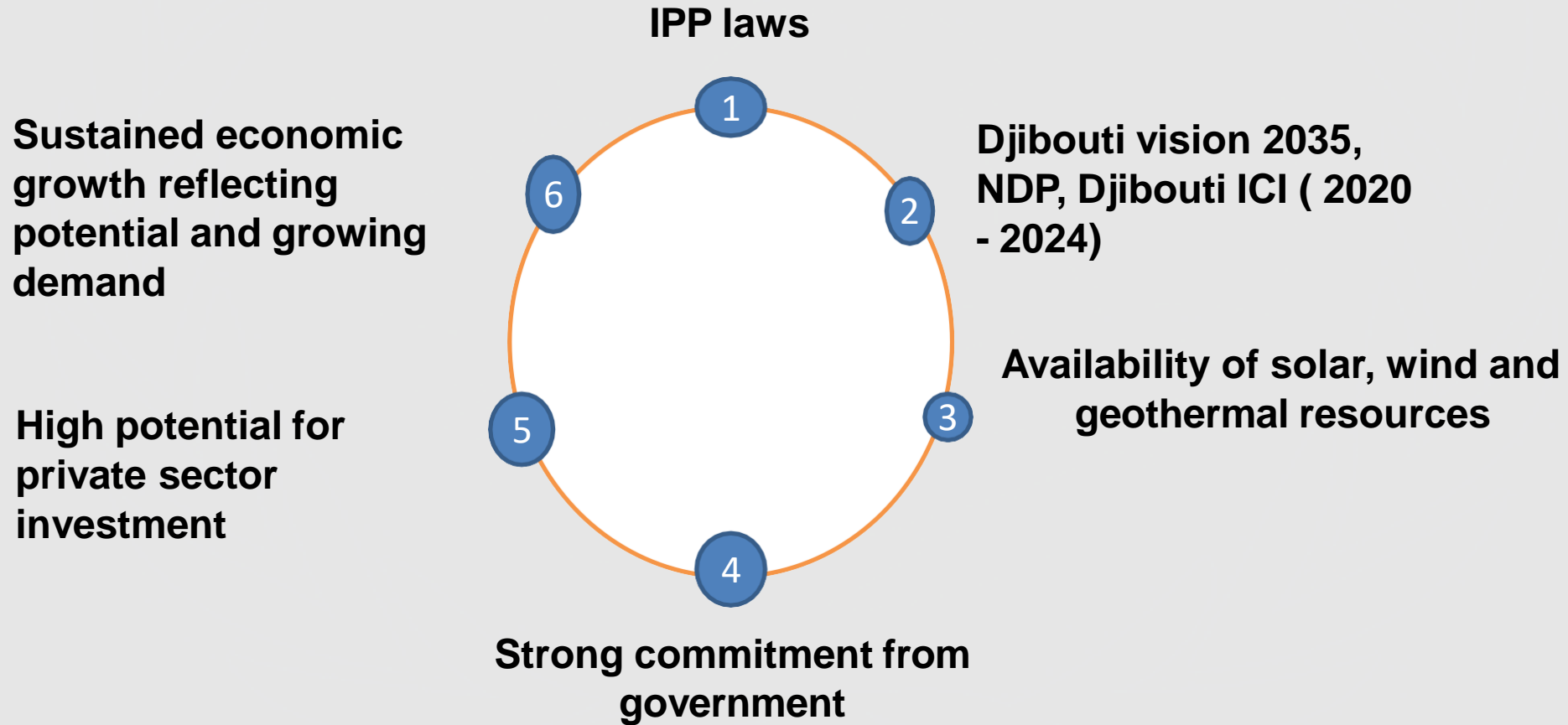
3. Improving energy efficiency



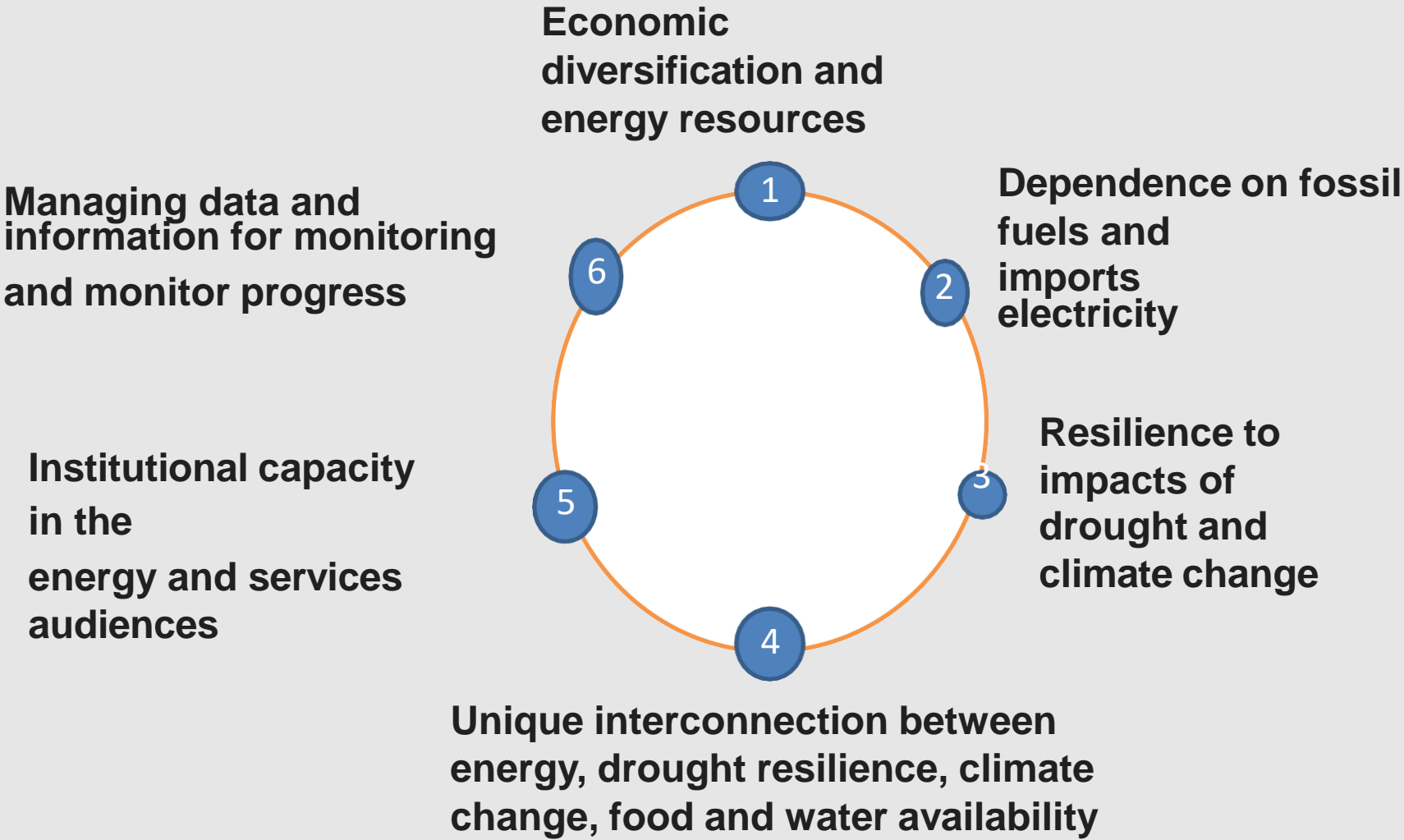
□ The contribution of energy to the implementation of the Djibouti Vision 2035



□ Opportunities for the Roadmap



Challenges for the Roadmap



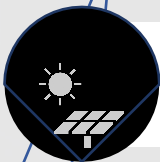
□ The roadmap's areas of intervention to achieve several objectives



1. Access to sustainable energy is a priority for eradicating poverty in all its forms and dimensions in Djibouti.



2. Accelerated structural transformation of the energy sector for economic diversification and sustainable development



3. Energy to boost resilience to the impact of drought

□ Examples of areas for action in the roadmap for the implementation and entry points for stakeholders

Energy for eradication poverty

Public and private sector energy investments in sectors focused on poverty eradication

- Incentives to encourage energy investment in rural areas
- Adopting innovative energy business models designed to add value to all commercial supply chains.

Transformation of Energy sector

Effective interdepartmental coordination

- efficiency energy an integral part of policies for universal access to energy

- Strengthening regulatory frameworks and legislation for private sector investment
- strengthening data and knowledge management capacity

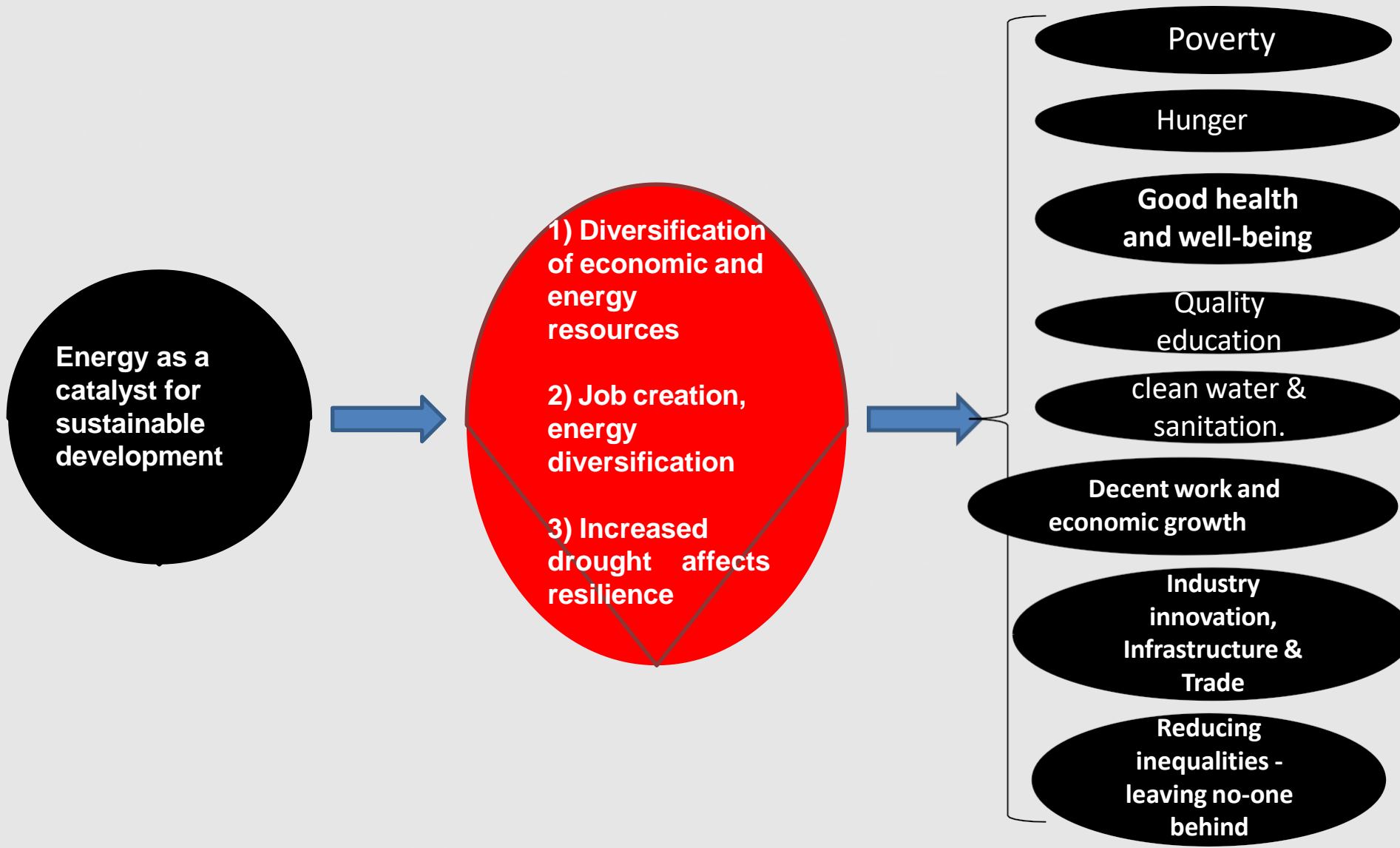
Energy to boost resilience to the impact of drought

• Integrate decentralised energy into resilience-building and drought recovery plans

- Integrating decentralised energy options into utility plans
- deploying energy technologies to develop value chains for strategic commodities for livestock and agriculture

Entry points for stakeholders

□ Energy roadmap to achieve Djibouti's Vision 2035 objectives





THANK YOU FOR YOUR
ATTENTION

