



Funded by the
European Union

RCREEE

Regional Center for Renewable Energy and Energy Efficiency
المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة



Mitigation Enabling Energy Transition in the MEDiterranean region

Overview of National Energy Efficiency Action Plans in Egypt

Mohammed Ahmad Abdelmowla

Energy Efficiency and Climate Change Expert

Egyptian ministry of electricity and renewable energy(MOERE),

Decarbonization Day– meetMED II 11/11/2022

“Maximize the efficient use of various Energy resources in a competitive, environment manner focusing on renewable energy, energy efficiency and new technologies”.

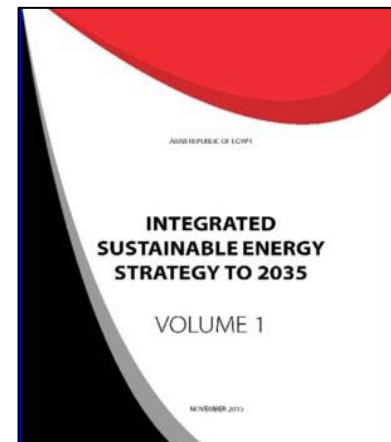
With a Coherence among the
Egypt's energy vision 2035
& National SDGs 2030
and UN SDGs 2030.



Egypt Vision 2030



Sustainable Development Goals



Energy Strategy 2035

**Increase in
greenhouse
gas
emissions.**

1

2
**High current
consumption
intensity.**

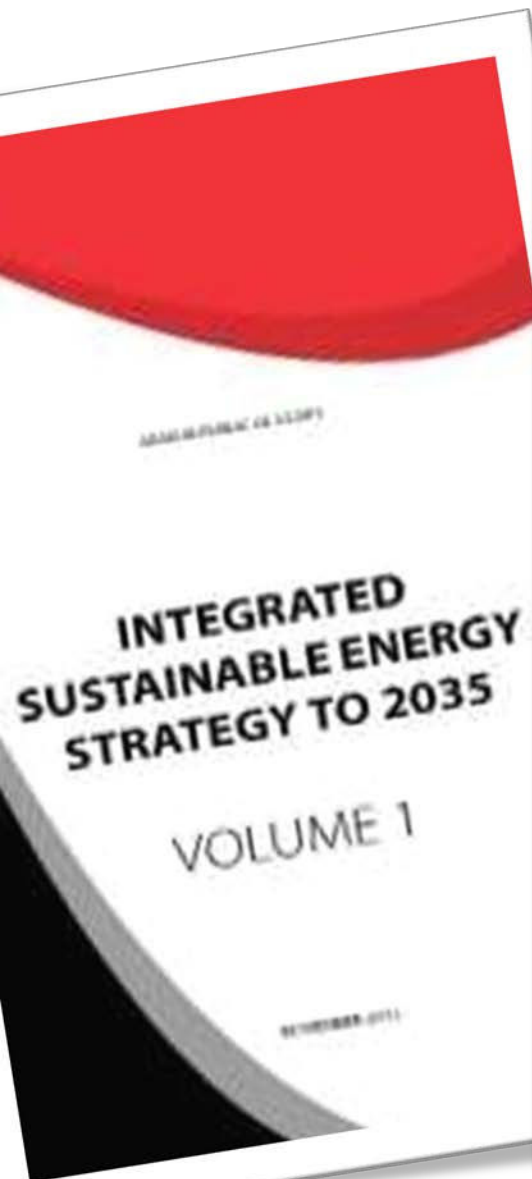
**Increase
domestic
consumption
of
electricity.**

3

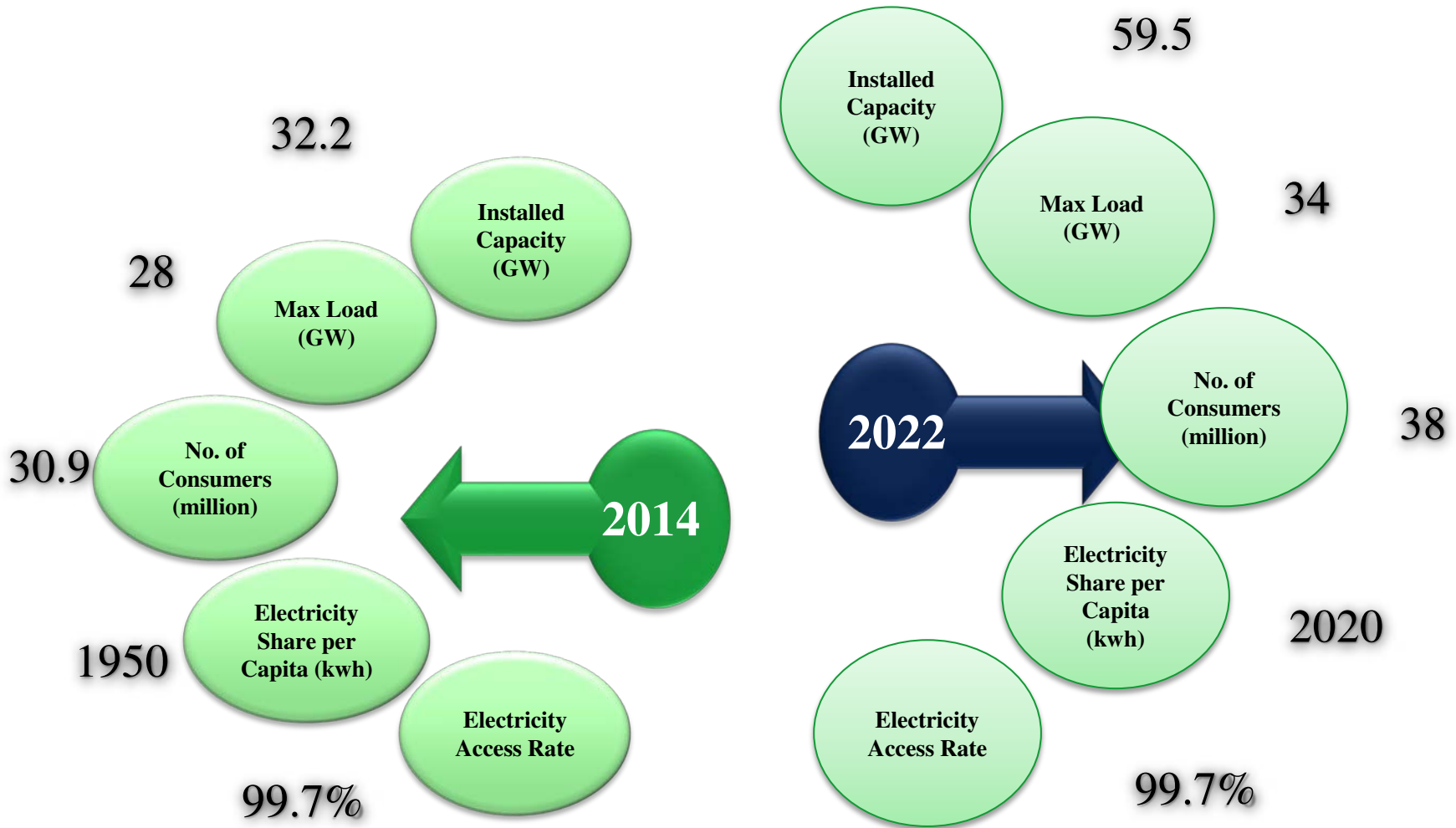
**Increase the
fuel rate
required
for
production**

4

5
**increase
electrical
loss of
grid.**



- **The Supreme Energy Council approved the "Integrated and Sustainable Energy Strategy 2035".**
- **Targeting 42% RE as a share of generated electricity by year 2035.**
- **The National Energy Efficiency potential is estimated to save **20 Mtoe or 18%** of the **2035** total final energy consumption comparing to the base year 2010.**
- **Currently, and despite the global gas crisis, using **coal** has been excluded from energy mix and being replaced by **renewable energy**.**
- **Private sector investments will play critical role in achieving the target through a framework mechanisms .**



National Energy Efficiency Action Plans

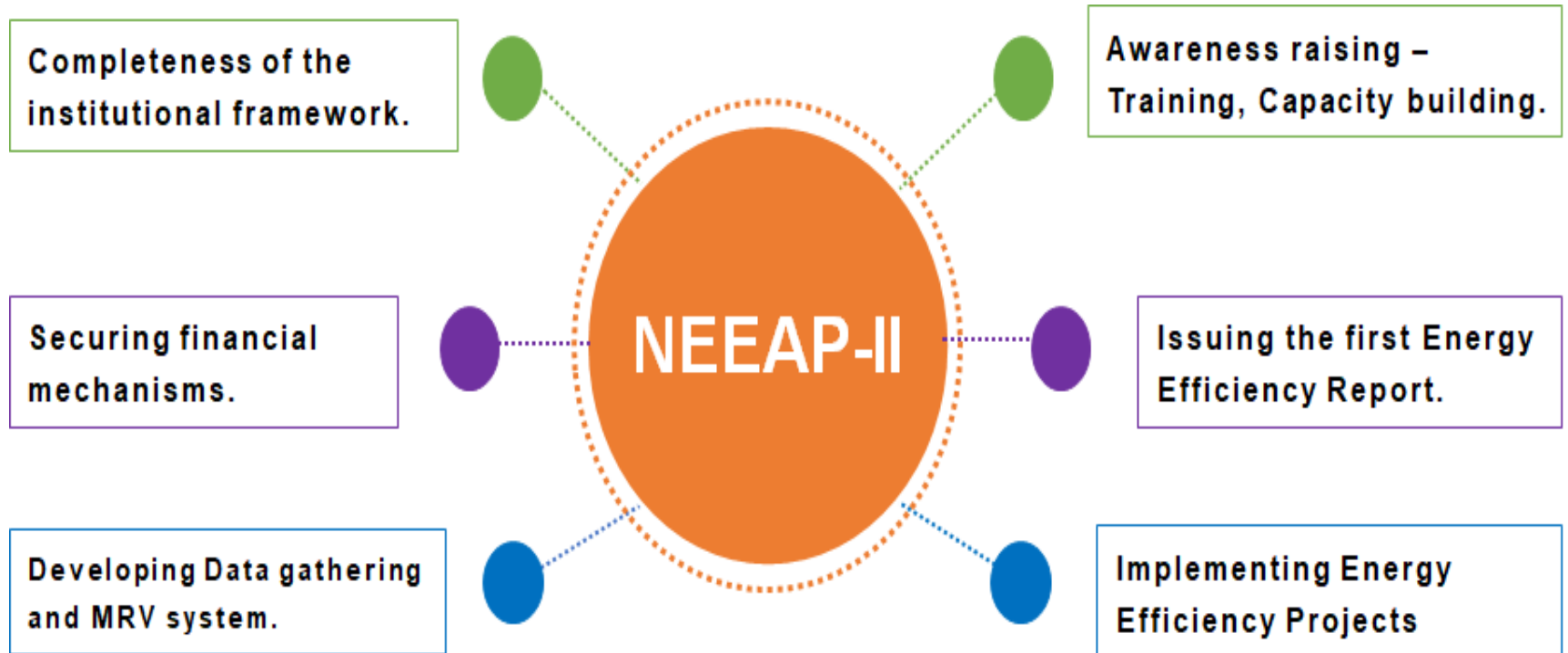
Highlights: Adopted EE Programs

EE for different consumption sectors (Residential - public facilities & government agencies-tourist) several programs were considered

Main Challenges and Lessons learnt

- **Lack of Institutional Setup.**
- **Absence of a mechanism for verification, follow-up and evaluation of the plan's targets.**
- **The plan is based on a bottom-up approach and not linked with the strategic objectives.**
- **Limited capacity building programs.**
- **Lack of programs targeting youth and civil society.**

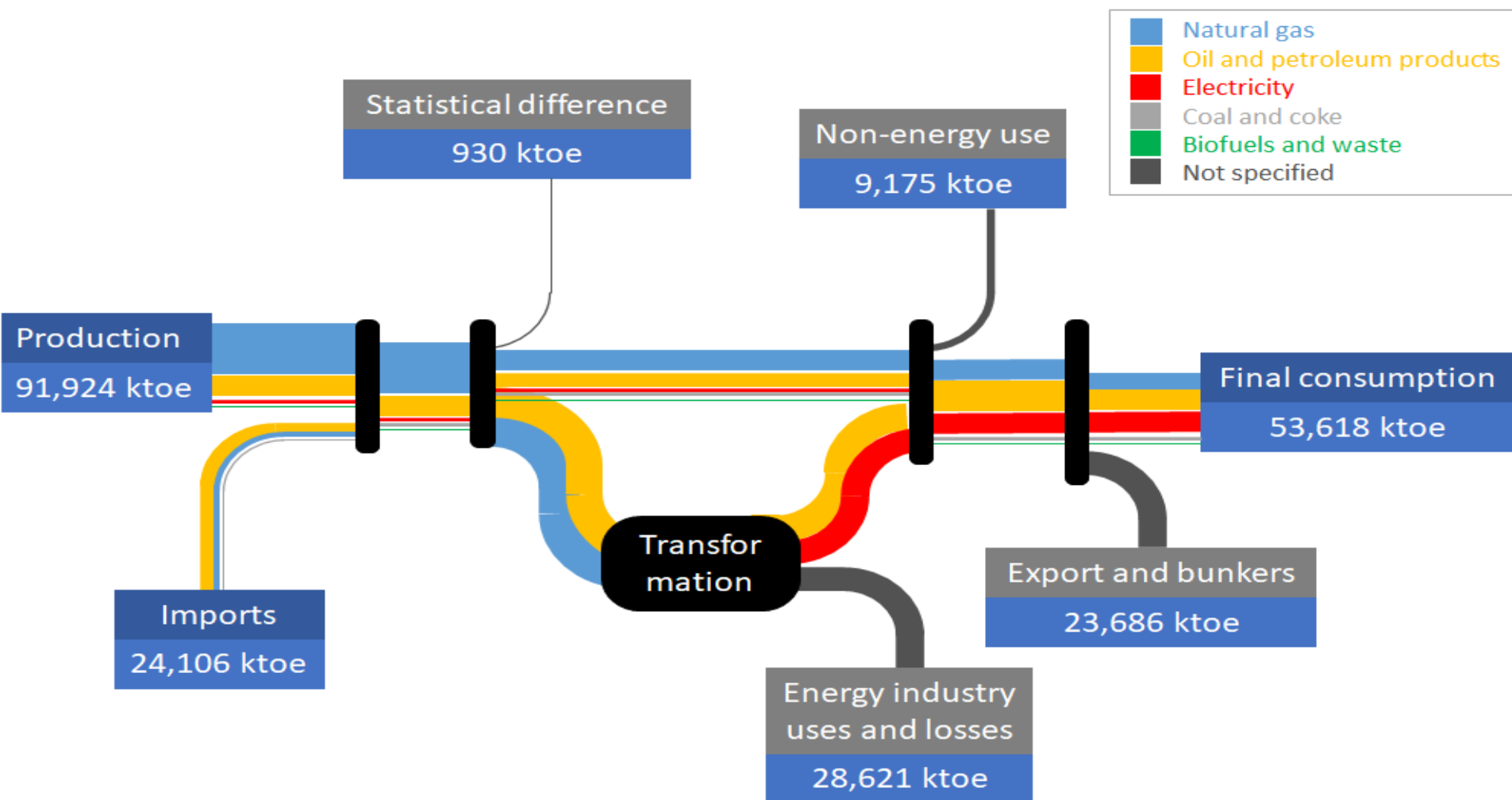
- The NEEAP-II (2018/2019 - 2021/2022) was approved by the cabinet in complying with the objective of Egypt SDS 2030“ and “ISES 2035”. It adopted an institutional setup for energy efficiency based on central planning and decentralized implementation by Activating and enabling EE units in the various economic sectors.
- The NEEAP-II includes the following main pillars.



This report is the first energy efficiency report of Egypt for the period of NEEAP-II (2018/2019 - 2021/2022) which highlights achievements on energy savings in both supply and demand sides of electricity sector. Energy saving led to CO2 emissions saving, as well as financial saving by conserving natural gas which would have been used in power plants.

- Energy balance allows policy makers to grasp entire country's energy flow from primary energy supply, conversion, to final consumption.
- Energy flow starts with the origins of energy products (indigenous products to Egypt such as natural gas, crude oil hydro, PV, wind, biofuels, as well as those imported and exported), covers transformation and other processes and ends with final consumption in each sector.

The following figures show the latest national balance of Egypt in 2020/21



The figure below shows **Key Performance Indicators (KPI)** during the NEEAP-II period (2018/2019 - 2021/2022). which indicate the following primary achievements of the electricity sector:

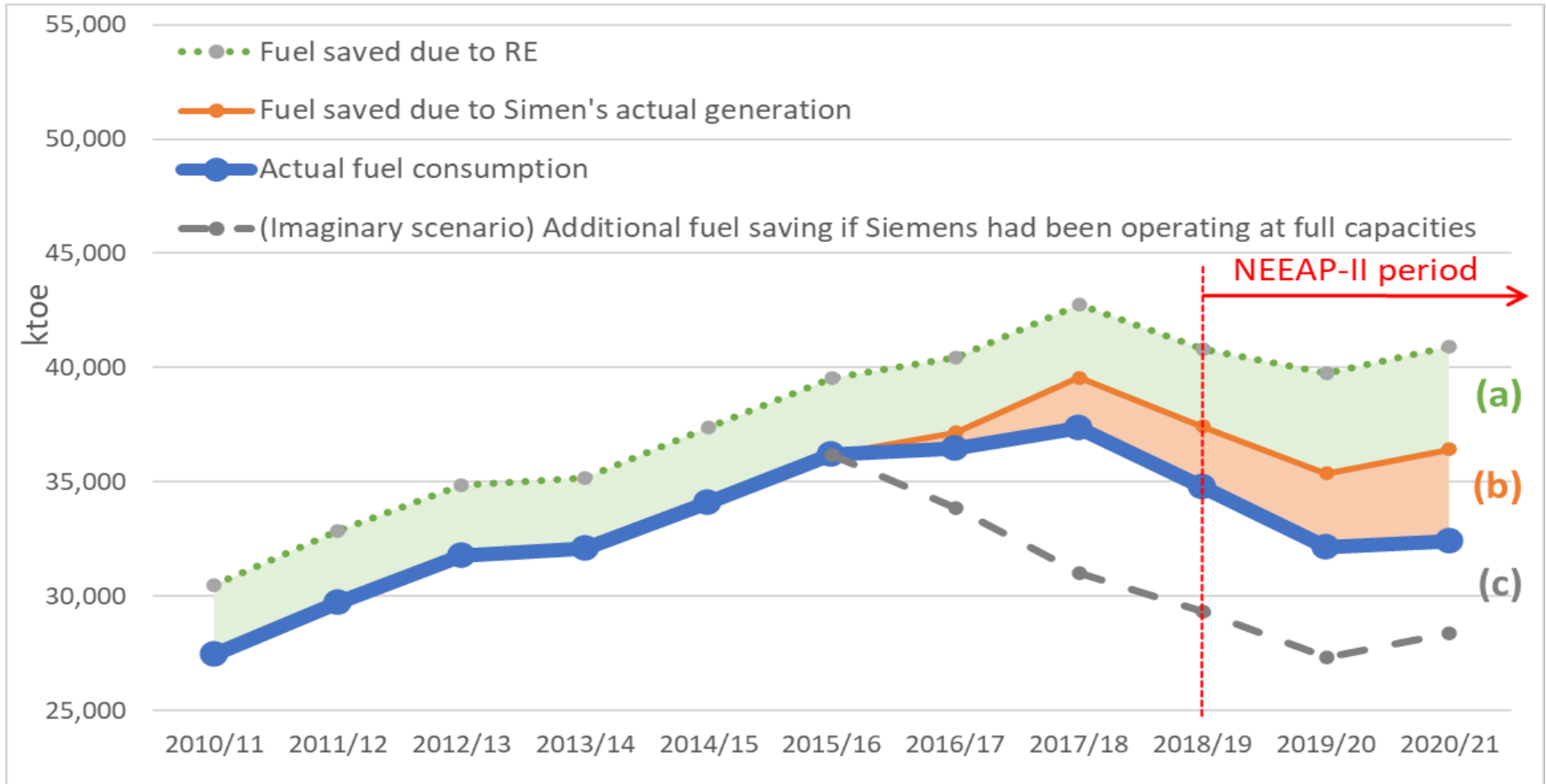
- (a) Installation of renewable energy (**Achieved**)
- (b) Partial operation of highly efficient combined cycle power plants of Siemens (**Achieved**).
- (c) Another scenario was evaluated when Siemens power plants operating at full capacities (**Scenario**)

Savings from supply side measures

Fuel saved due to	Energy saving (ktoe)			Financial saving (Million USD)			CO2 emissions saving(t-CO2)		
	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21	2018/19	2019/20	2020/21
(a) Renewable energy	3,372	4,386	4,500	838	675	1,710	7,920,656	10,301,346	10,570,822
(b) Siemens (Actual generation)	2,641	3,247	4,024	657	500	1,529	6,203,275	7,627,077	9,453,100
Total	6,013	7,633	8,525	1,495	1,175	3,239	14,123,932	17,928,423	20,023,922

Source: EEHC annual reports,

Natural gas price as USD 6.2/MBtu for FY2018/19, USD 3.9/MBtu for FY2019/20, USD 9.5/MBtu for FY 2020/21 from IEA gas report (TTF annual average)

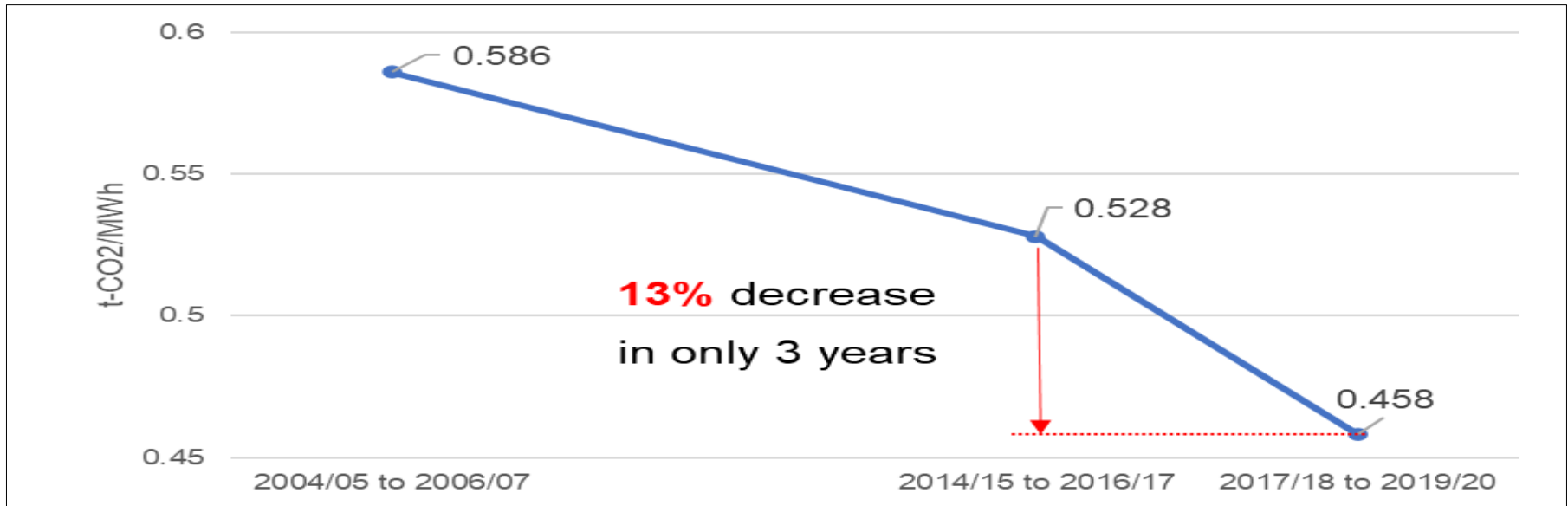


Achieved fuel saving ((a)+(b)) amounts to USD 3,239 million in 2020/21 in a monetary term, which is equivalent to 0.7% of GDP.

Climate Change

Grid emission factor

The numbers of Egypt's grid emission factor have been decreasing. Compared to the past three years of 2004/05 to 2006/07, the recent three years of 2017/18 to 2019/20 show improvement from 0.586 t-CO₂/MWh to 0.458 t-CO₂/MWh, which means 21.8% improvement in 15 years.

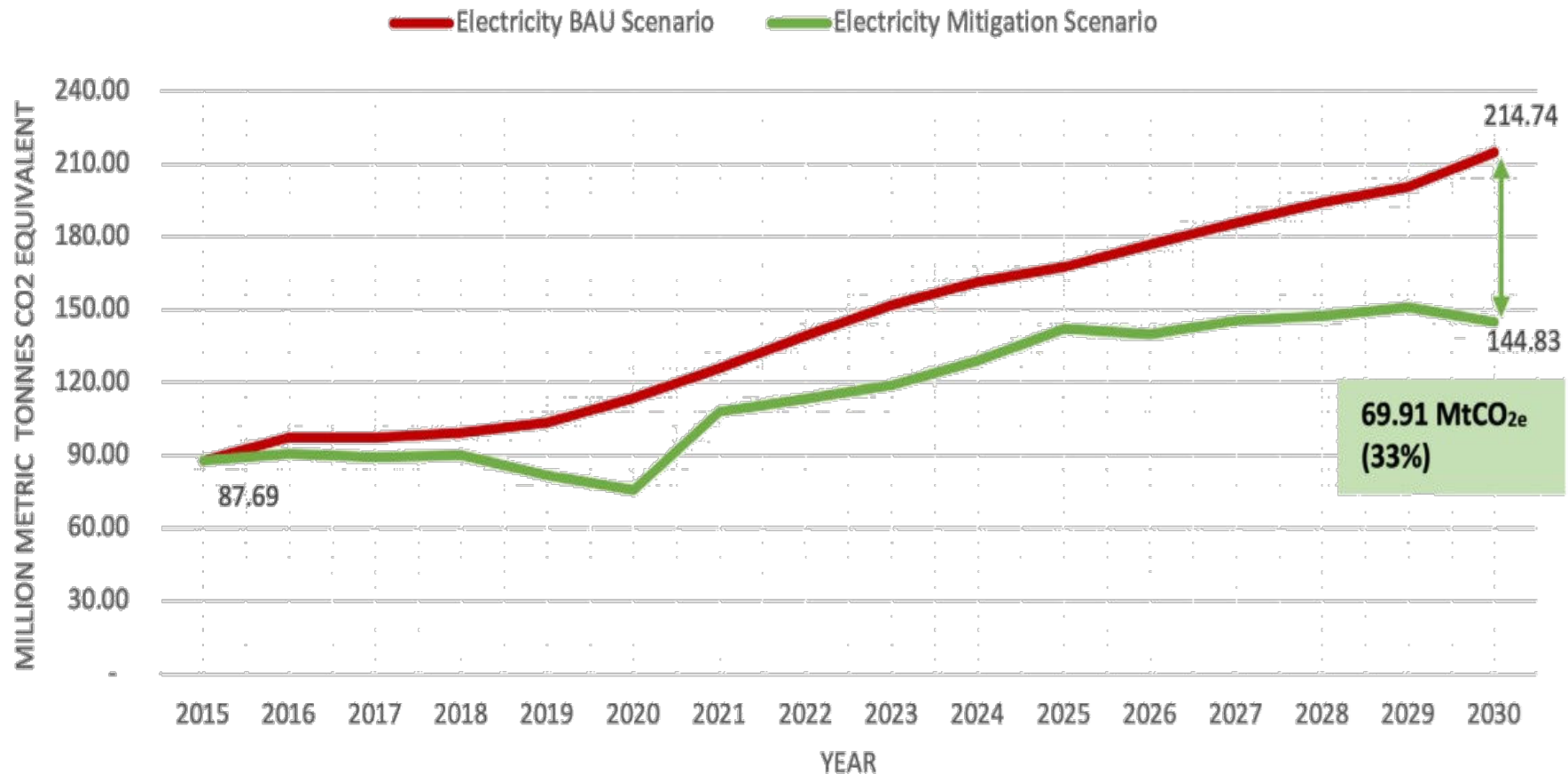


Grid emission factor

Source: GIZ-JCEE Development of 4 EE action plans & quantification of GHG mitigation potential of 9 EE measures under the NEEAP-II for 2017/18 to 2019/20

CO2 emissions reduction target

Egypt's first updated nationally determined contributions (NDCs) (published in June/2022) stipulates a target to reduce CO2 emissions by 33% by 2030 in electricity generation, transmission and distributions.



Source: Egypt's first updated NDC

Future energy efficiency policy will be planned based on national energy balance, where various projects and activities among different sectors will be selected, monitored and evaluated by using the common unit as primary energy saving effect. Potential focus areas will include;

- Renewable energy instead of Coal energy option in energy mix.
- Measures in NEEAP-II with high yet unfulfilled energy saving potential
- Elimination of non-efficient appliances
- New technologies:**
 - ❖ **Hydrogen**
 - ❖ **E-mobility**
 - ❖ **Waste to energy**
 - ❖ **Water desalination**

Thank you

Contact us!



Mitigation Enabling Energy Transition in the MEDiterranean region

Together We Switch to Clean Energy

For any inquiries or comments,
please don't hesitate to contact
us

 www.meetmed.org

 meetMED Project

 @meetmed1



This project is funded
by the European Union