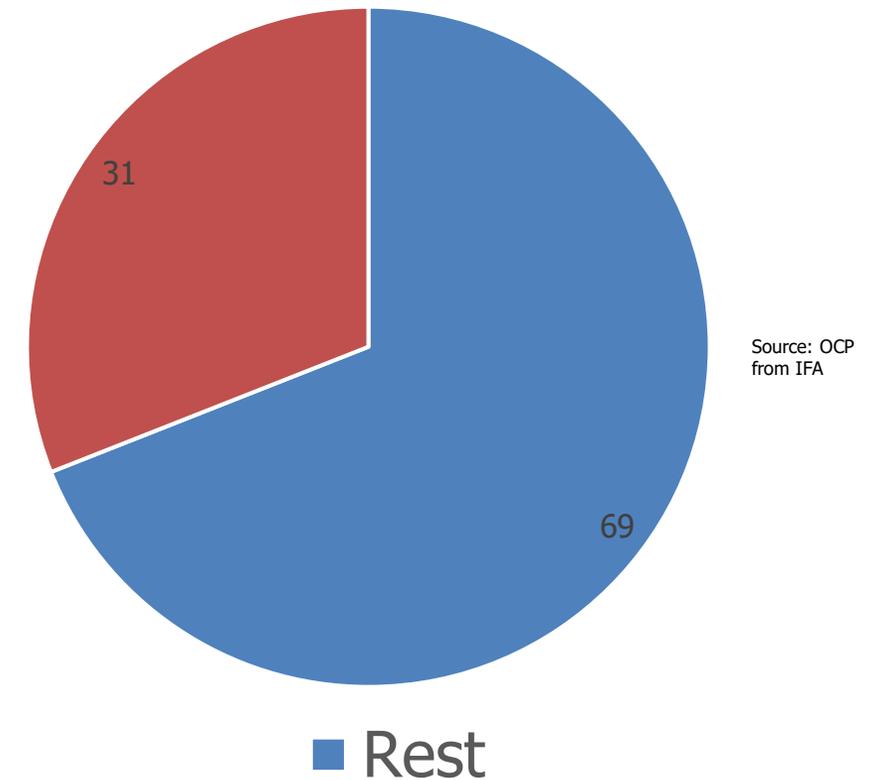




- Morocco has access to 70 % of the global phosphate reserves
 - its state-owned enterprise „OCP“ is the world's largest producer of P fertilizer
- Monoammonium- (MAP) and Diammoniumphosphate (DAP) are the most common forms
 - 11 % and 18 % nitrogen content deriving from ammonia
- This ammonia is imported, since Morocco has no significant fossil reserves to produce grey ammonia

Global Market Share of OCP in P Fertilizers (2020)

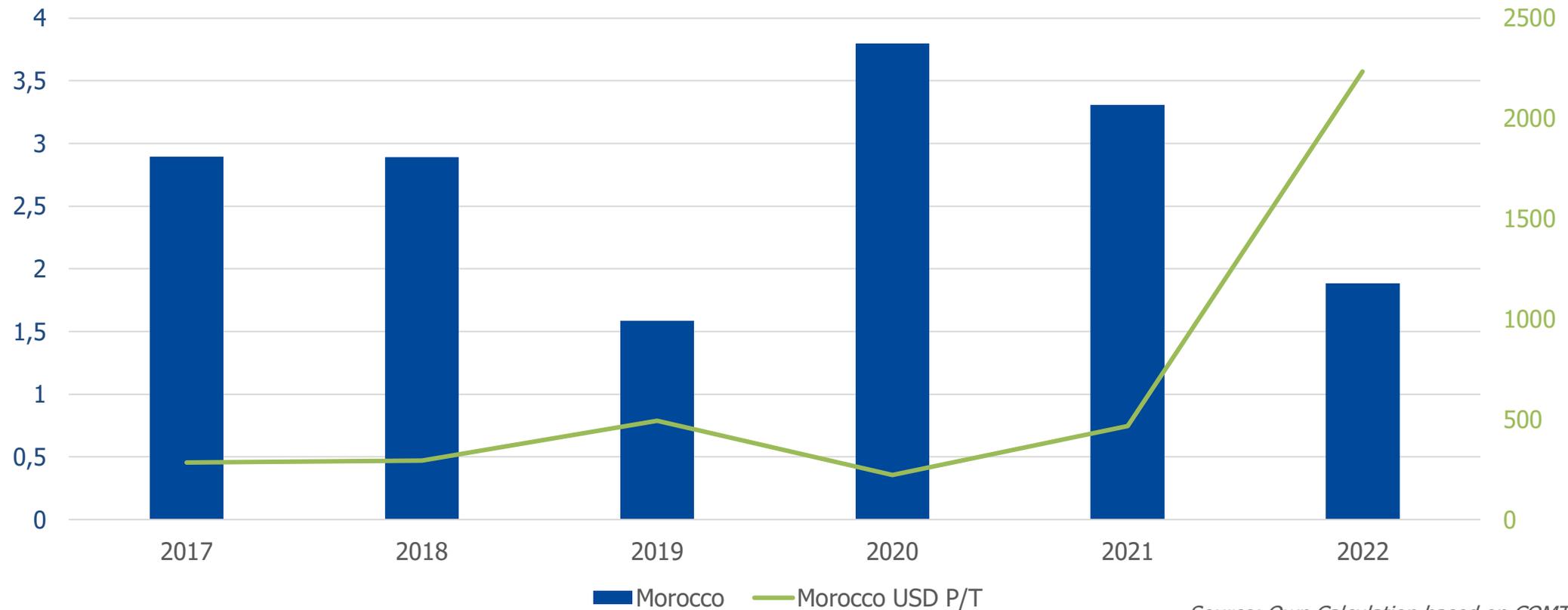


Morocco's Ammonia Dependency

Quantity And Price of Ammonia Imports

Imports in Million Tonnes

USD Price per Tonne



Source: Own Calculation based on COMTRADE 2023

- Embedded in the National Hydrogen Strategy of 2021
 - Substitution of grey ammonia imports is thereby the main short-term goal
- OCP launched in 2022 a \$13 billion “Green Investment Strategy”

Green Energy

2027: Production of 5 GW

2032: Production of 13 GW

Green Ammonia

2027: Production of 1 M Tonnes

2032: Production of 3 M Tonnes

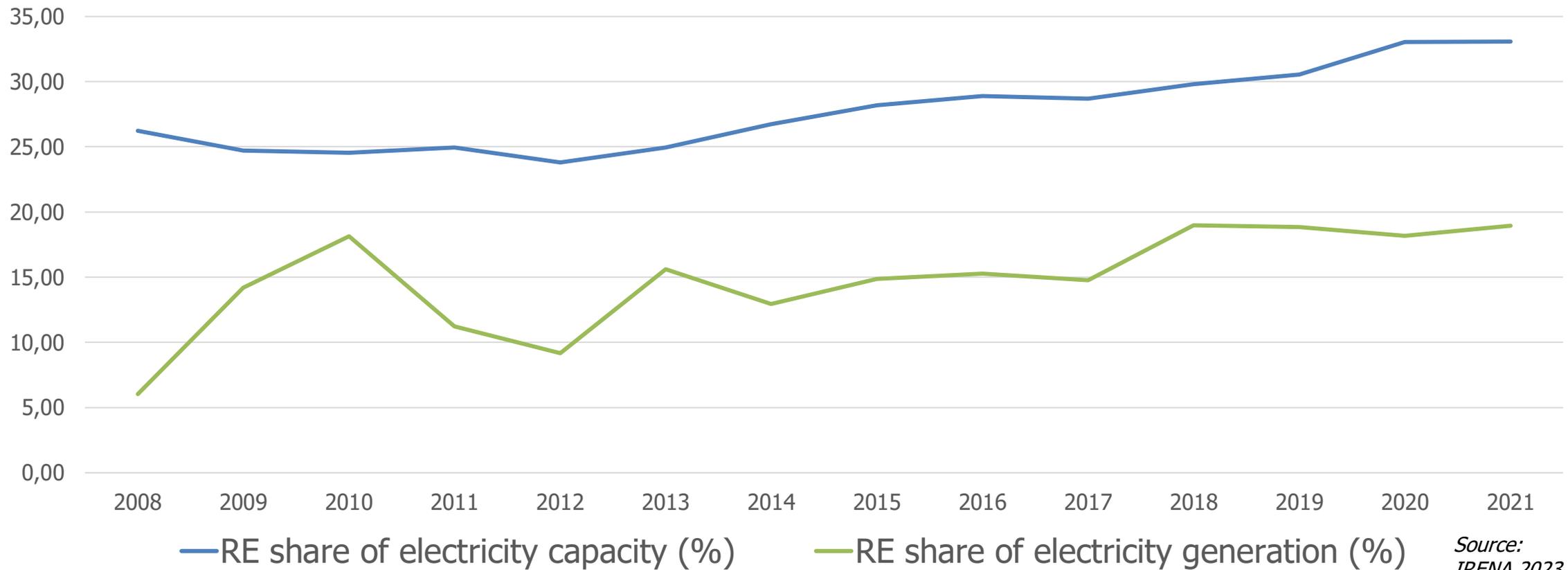
Seawater Desalination

2023: Capacity of 110 M m³

2026: Capacity of 560 M m³

Morocco's Ongoing Transition

Share of Renewable Energy Production in Morocco on Capacity and Generation



Source:
IRENA 2023

- OCP Africa has 12 subsidiaries and is active in 16 countries
 - ➔ *"African agriculture is at a transformational moment in its history - and a time of incredible possibility and promise for farmers and industry alike" – OCP Africa*
- New grey ammonia projects in Nigeria, Ethiopia and Ghana
 - Question: Green Domestic vs. Grey Abroad?
 - ➔ *Aligned with the African "dash for gas" caused by European energy crisis*

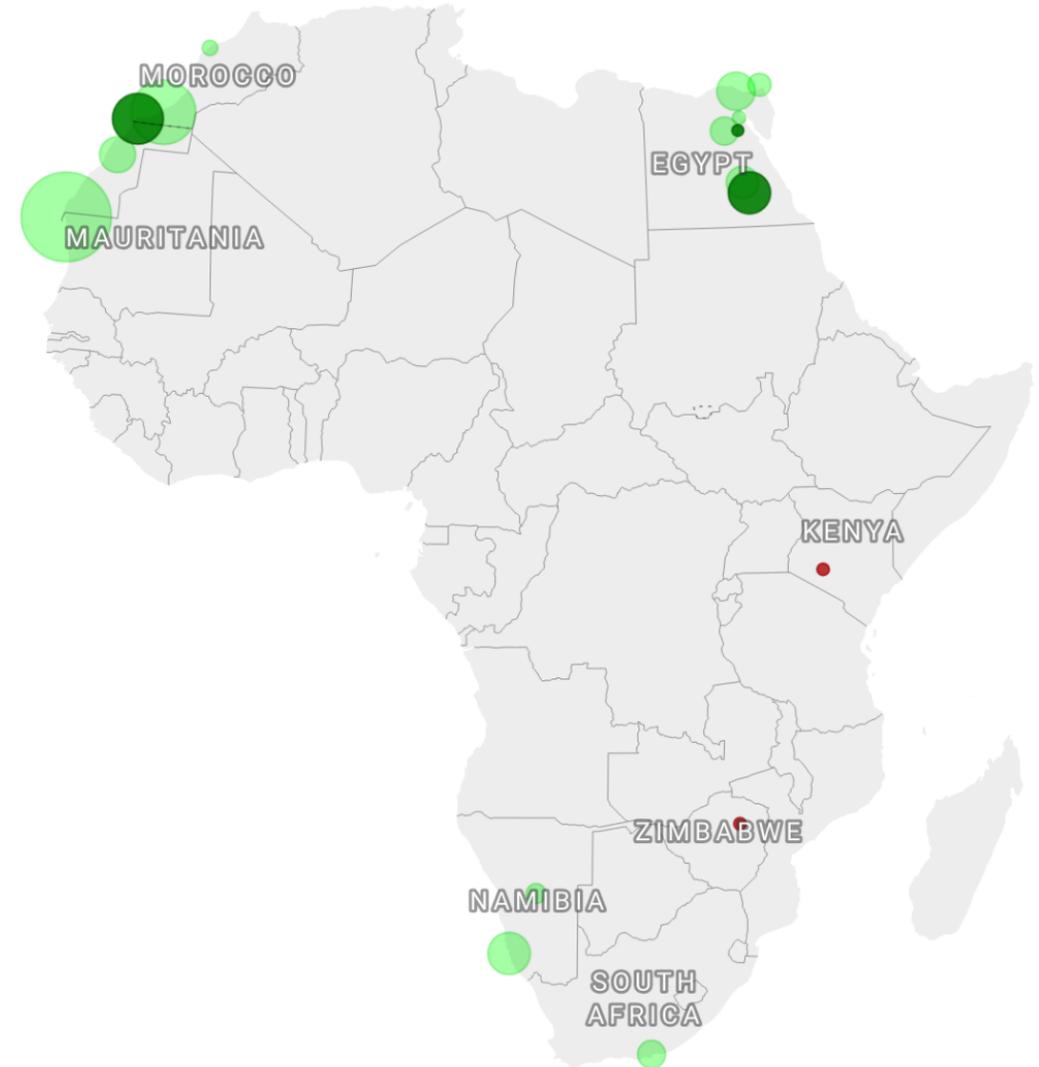


Africa's Green Ammonia Projects

- Green fertilizer plants are hard to finance due to high investment costs and small margins
- Infrastructure, capital costs, knowledge capacity can be considered major constraints in the African context

Planned Green Ammonia Projects by Capacity

For domestic demand and export (NaN) Related to the Fertilizer Industry (NaN) Capacity (kTPA) 1,000 4,000 10,000



Created with Datawrapper

Africa's Green Ammonia Hope?

- Small-Scale Fertilizer Plants could be a gamechanger for rural and land-locked areas
 - ➔ decrease of transportation costs and capital investment needed
- Could be anchor project for capacity building in renewable energy generation and maintenance

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Green

Kenya Farm to Host First On Site-Hydrogen-to-Fertilizer Plant, Iowa to Follow

- Talus Renewables says its plants cut the cost of fertilizer
- Supply, distribution risks minimized by on-site production

By [Antony Sguazzin](#)
11. Oktober 2023 at 07:00 MESZ
Updated on 11. Oktober 2023 at 16:42 MESZ

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The world's first commercial modular green ammonia plant is starting up in Kenya and the company behind the technology to make fertilizer plans to deploy the facilities as far afield as Iowa.

The plant, which was designed at [Talus Renewables](#), is sited near Naivasha, Kenya, near Nairobi. Under a 15-year off-take agreement with [Kenya Nut Co.](#), which grows a variety of nuts, the plant will produce ammonia for fertilizer.

It uses electricity, which in Kenya is generated by an on-site solar farm, to split water. The ammonia will be mixed with nitrogen to create urea. The plant removes the need for the fertilizer produced in Russia, cutting costs, securing supply and reducing emissions of climate-warming gases.



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