



**Delegation of German Industry and
Commerce for Eastern Africa**

Delegation der Deutschen Wirtschaft
für Ostafrika

Renewable Energy for Kenya

Practitioners' Forum on Renewable Energy

24. September 2019

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The Delegation of German Industry and Commerce for Eastern Africa



Competence Center Energy and Environment: Focus on Market Intelligence



Specific to Customers:

- Kenya Association of Manufacturers/ cyclos (Kenya Plastic Action Plan, 2019)
- UNIDO/ German Biogas Association (Biogas Standards in Kenya, 2019)
- German Chemical Conglomerate (anonymous, 2018)
- Worldbank/ IFC/ COWI (Bioenergy in Kenya, 2017)
- German Consulting Engineers (Inros Lackner, 2017)
- Konrad Adenauer Foundation (Devolution in Kenya, 2016)
- German Chemical Conglomerate (Lanxess, 2016)

Energy:

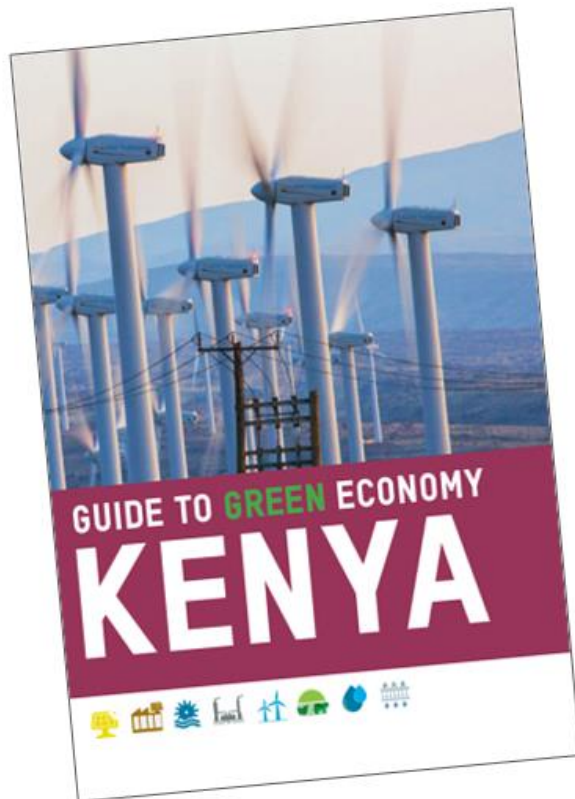
- Dezentralized Energy Access in Tanzania (2019)
- Renewable Energies in Kenya (2019)
- Dezentralized Energy Access in Ethiopia, Rwanda, Uganda (2019)
- Energy Efficiency in Industry and Commerce in Tanzania (2018)
- Energy Efficiency in Industry and Commerce in Kenya (2018)
- Dezentralized Energy Access in Kenya (2016)
- Finanzierungsinstrumente Subsahara-Afrika (2016)

Water:

- Sector Brief Water Sector in Ethiopia (2019)
- Market Analysis Water and Sewerage in Kenya (2018)
- Short Analysis Water and Sewerage in Kenya (2016)

<http://www.kenia.ahk.de/green-economy/target-market-studies/>

Guide to Green Economy - available online



<https://www.kenia.ahk.de/green-economy/>

Installed Capacity 2019: Kenya

by generation source in MW



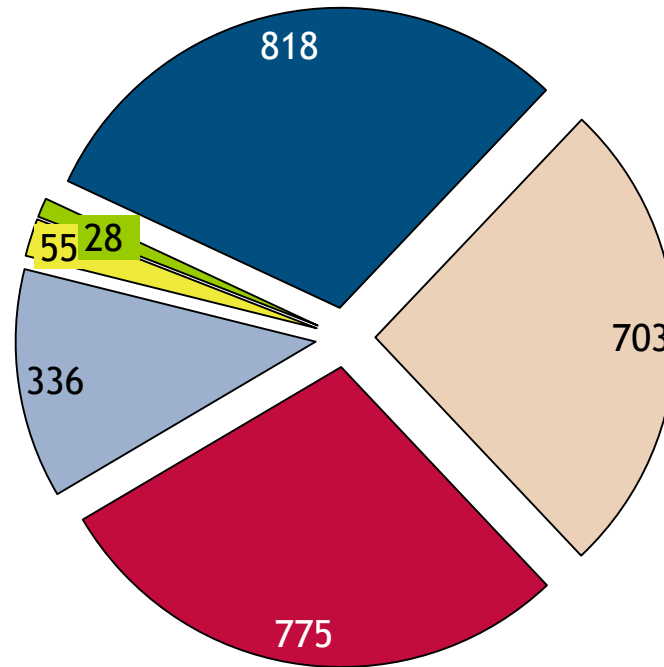
Turkwel Hydro Power Plant



Olkaria Geothermal Plant



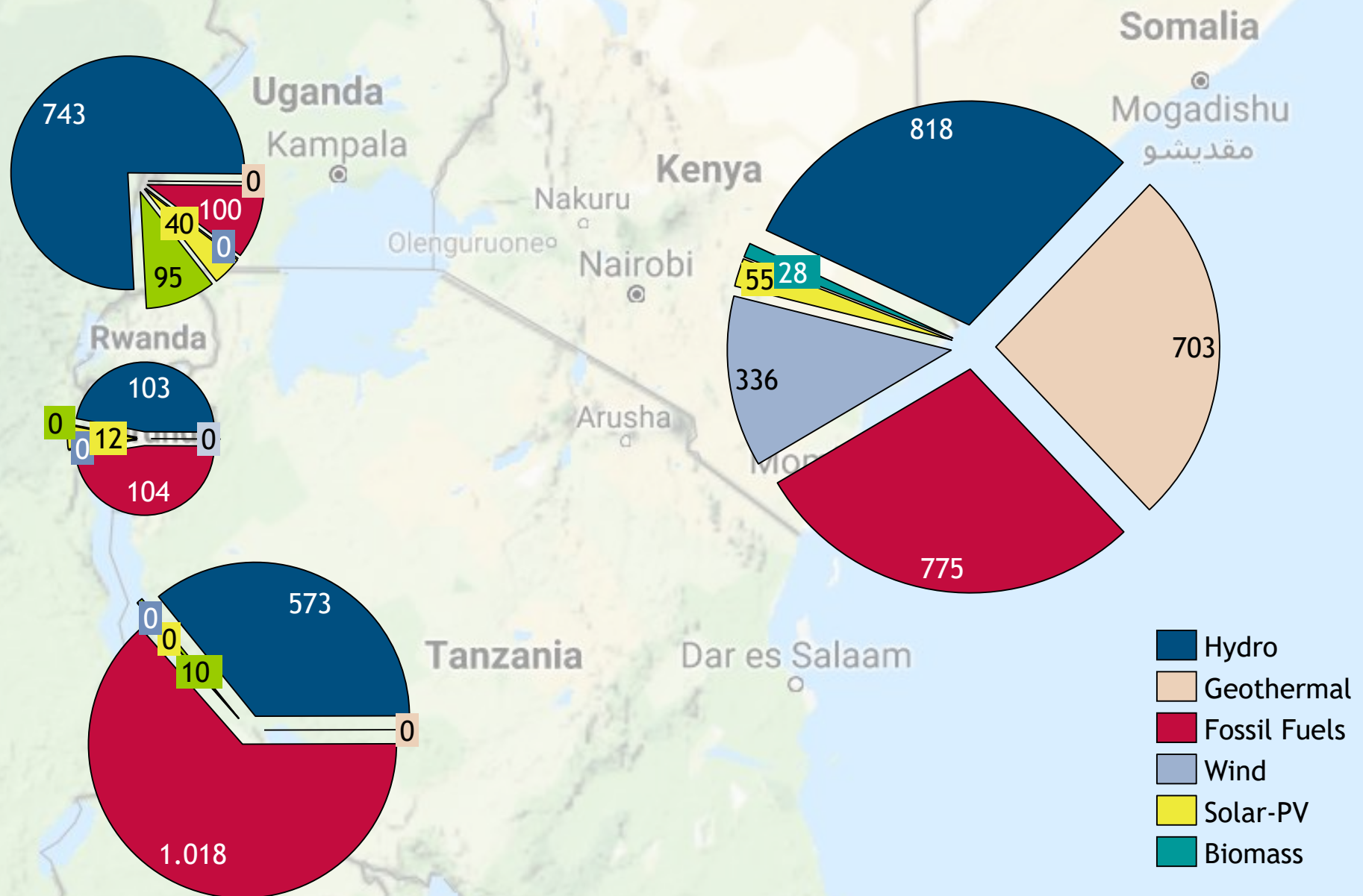
Lake Turkana Wind Park



installed capacity: 2,715 MW

- Hydro
- Geothermal
- Diesel/ HFO
- Wind
- Solar-PV
- Biomass

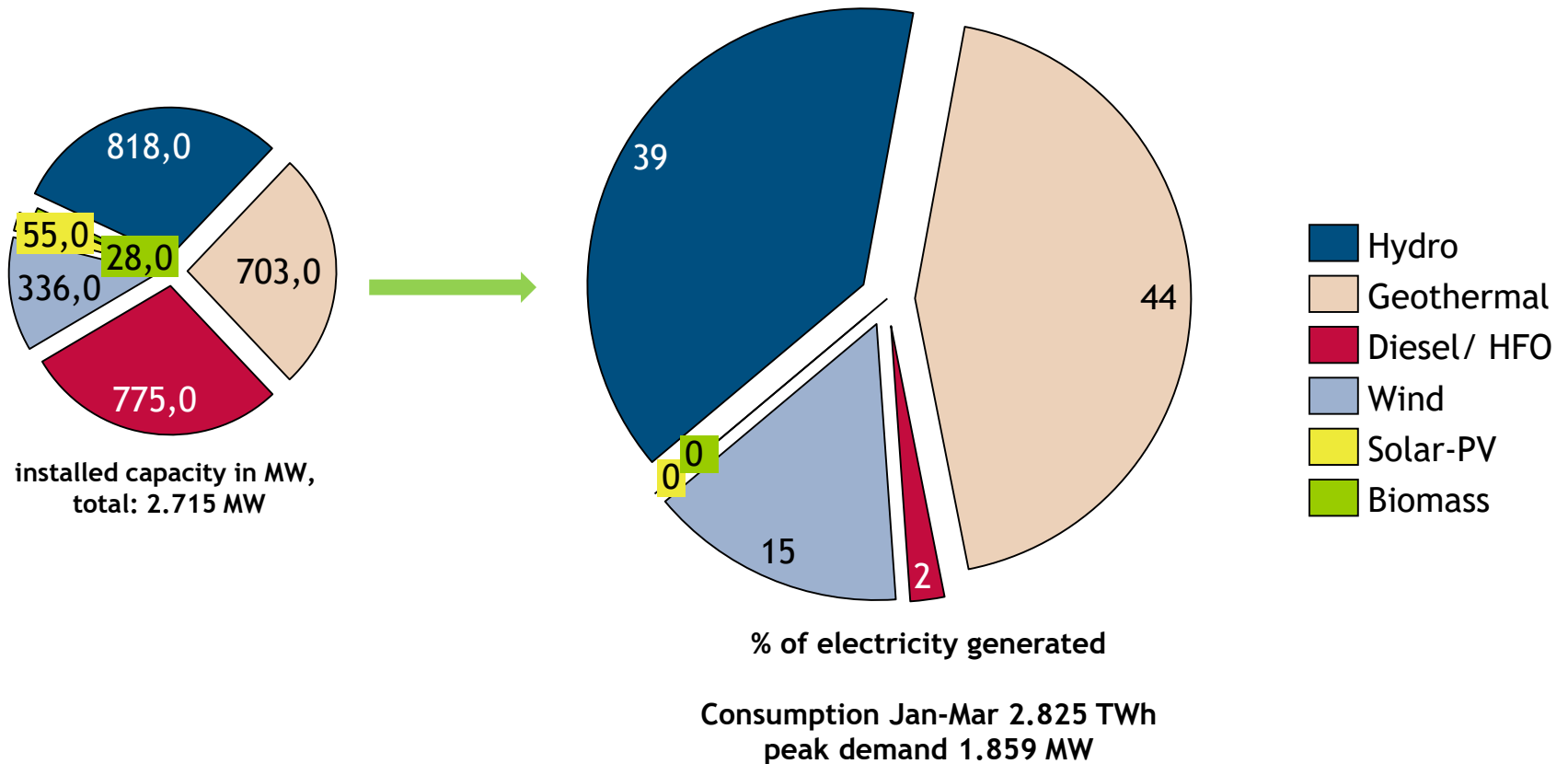
Installed Capacity 2019: Kenya, Tanzania, Uganda, Rwanda



Source: Own presentation related to publicly available utility data; underlying map: Google Maps

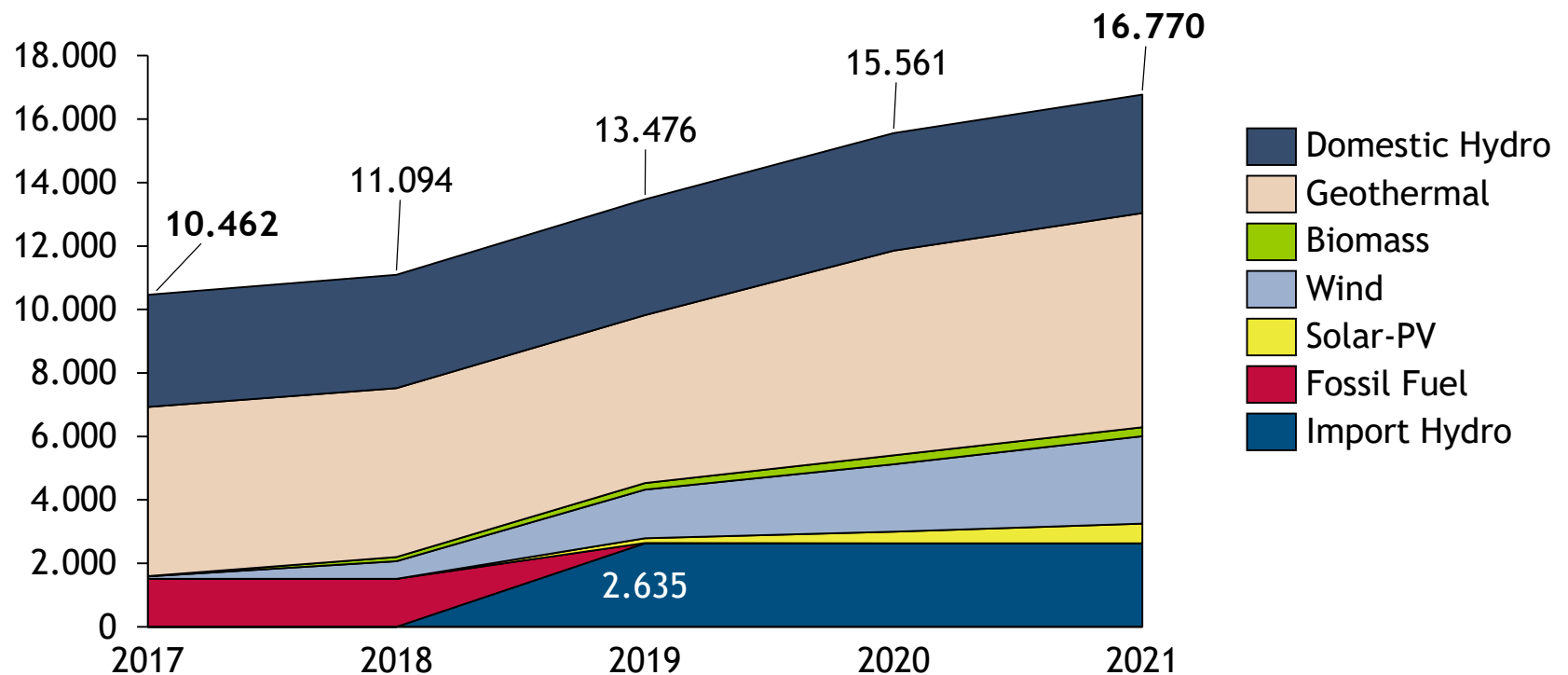
Electricity Generation by source: Kenya

January to March 2019 in TWh



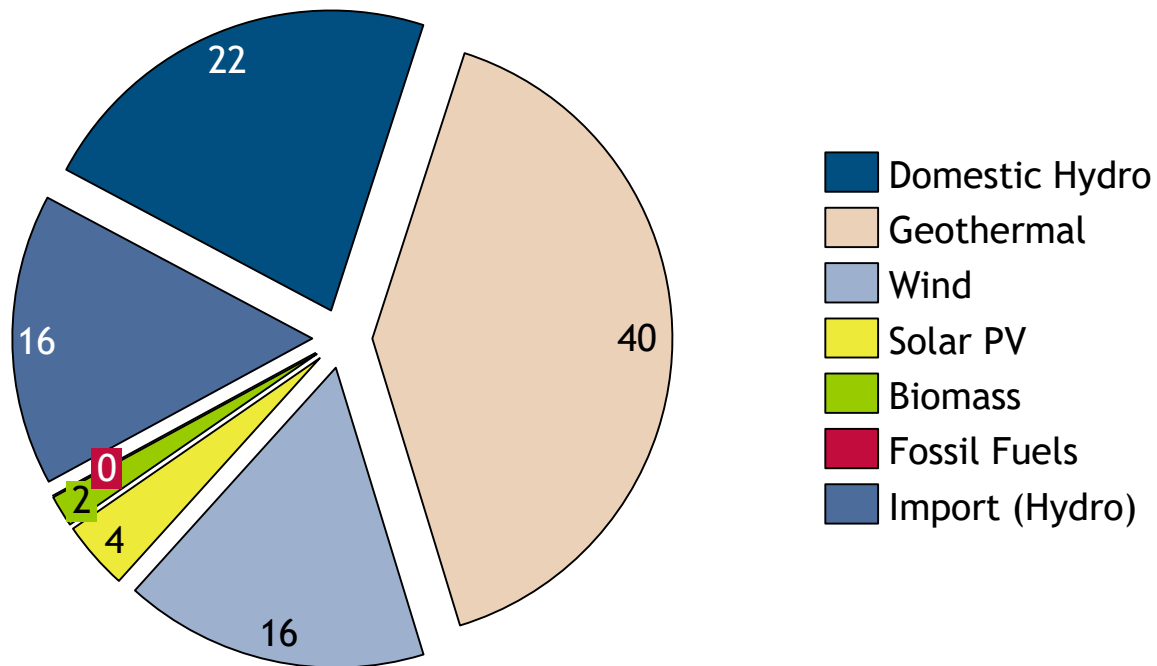
Electricity Generation Expansion Plans until 2021: Kenya

by generation source in GWh



2021 Projections

Projected electricity output by source - 99%+ Fossil Free



Relevant Policies

Energy Act 2019

Feed-In-Tariff Regulations

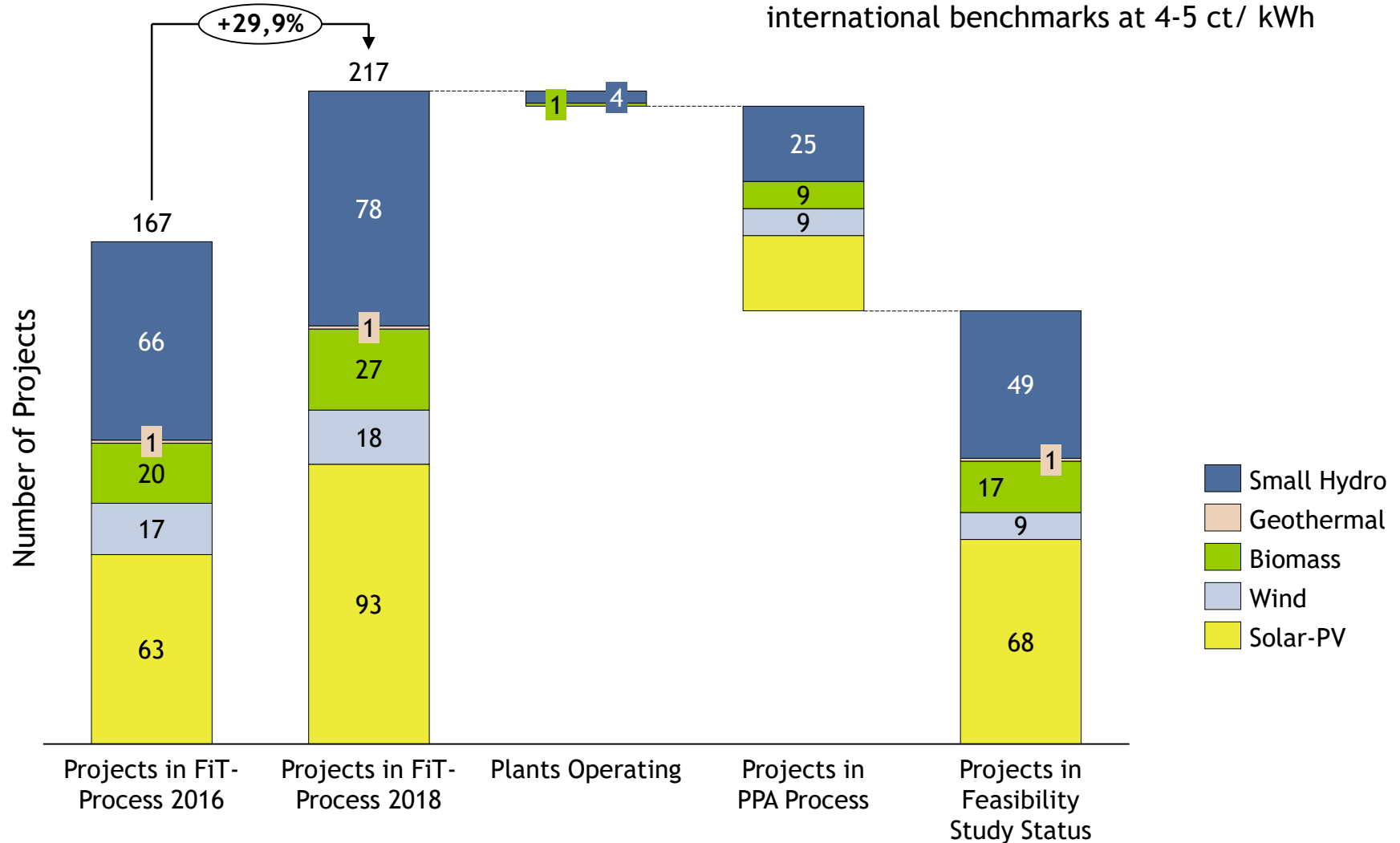
Net-Metering

Off-Grid Electrification Initiative

Feed-In-Tariff Regulations

by Number of Projects per Energy Source

Total capacity of projects in pipeline ~4,000 MW
vs. 2,715 total current generation capacity (2019)
Solar PV feed in tariffs are being adjusted towards
international benchmarks at 4-5 ct/ kWh



Net-Metering

Energy Act 2019 162 (2)

„Each distribution licensee or retailer shall, upon application, make available net metering services to any electricity consumer that the licensee serves as prescribed in regulations“ (< 1 MW).

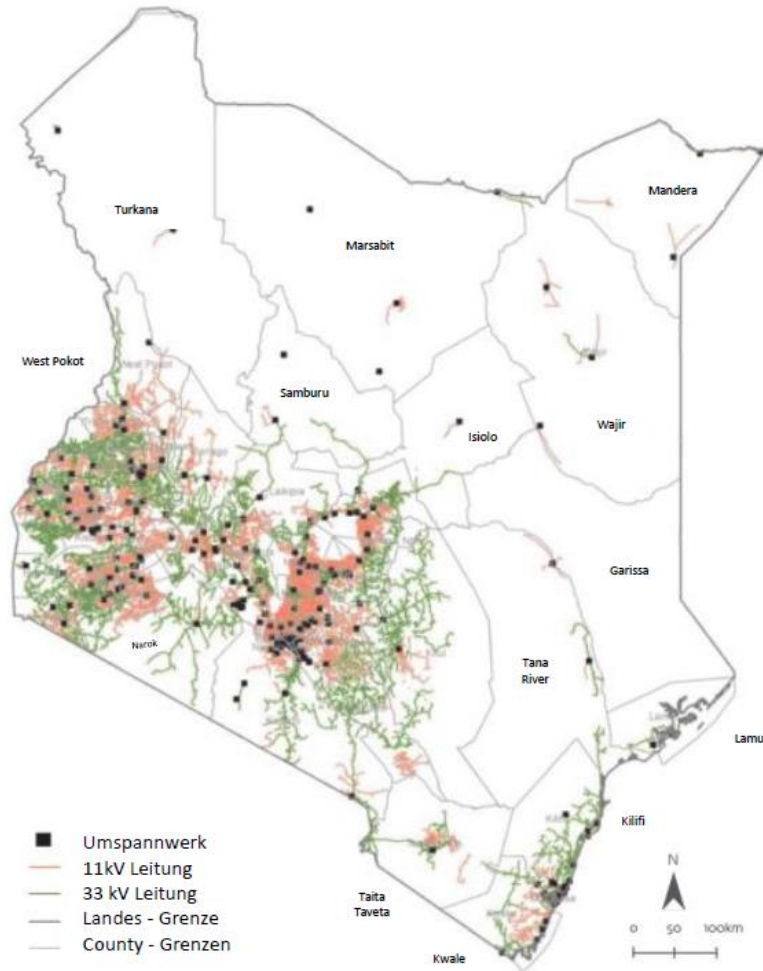
Not in line with political priorities

Grid capacity constraints

Discussions evolve around 0,62-0,65 kWh deduction per kWh fed in

Off-Grid Electrification: Kenya

existing power distribution network



Key Projects

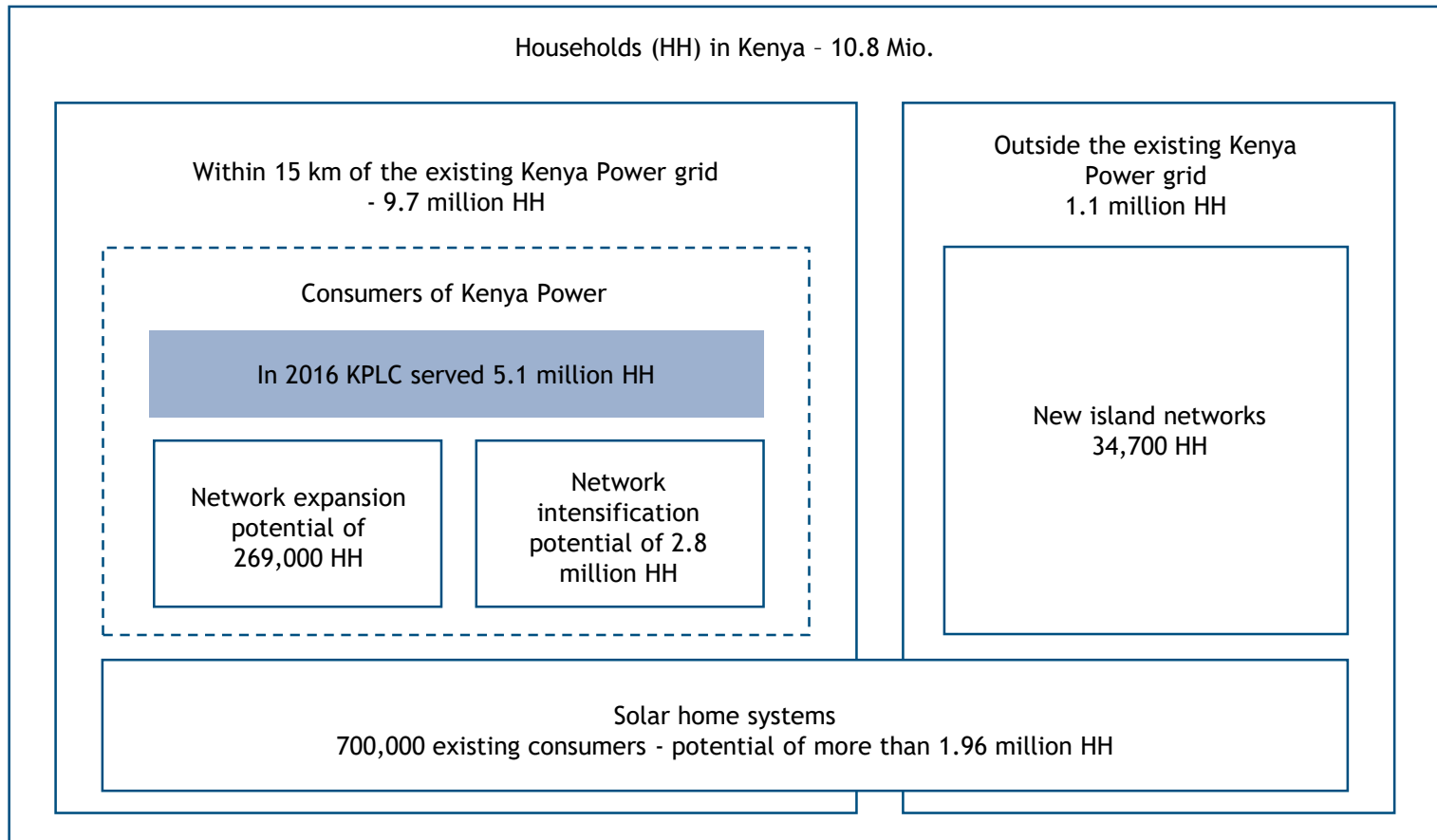
- Kenya National Electrification Strategy (KNES)
- Kenya Off-Grid Solar Access Project for Underserved Counties (KOSAP)



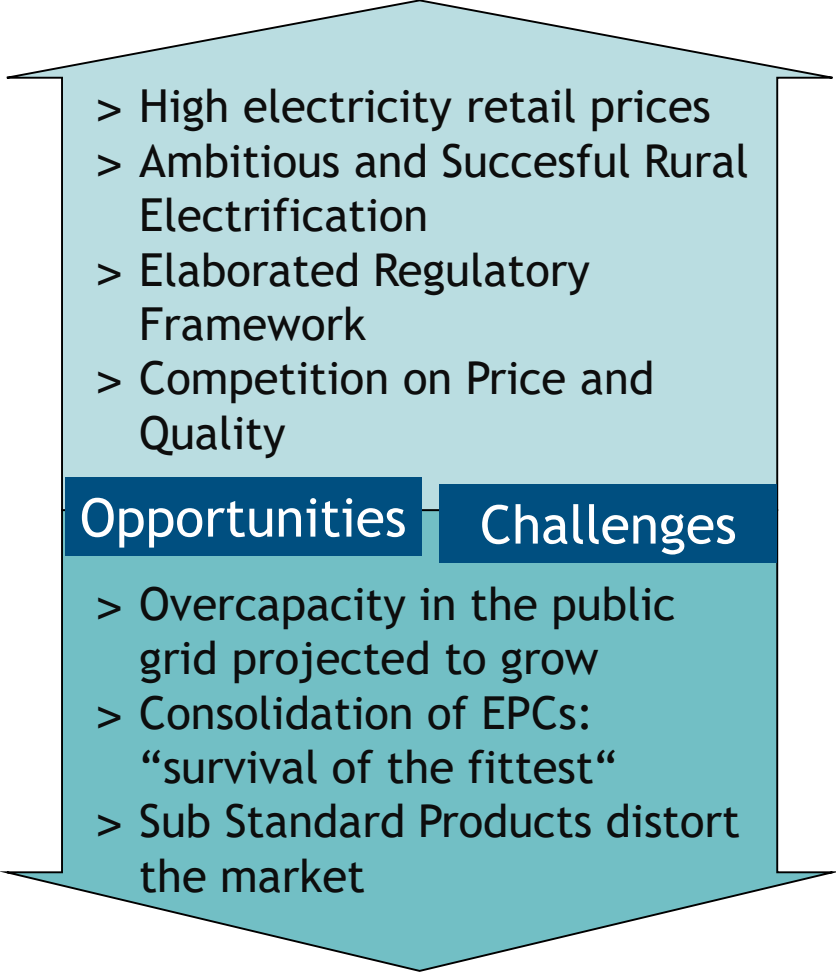
Solar Home Systems, Source: GIZ

Technology Options for universal Electrification

grid expansion, solar home systems, island nets



Market Assessment Solar Energy in Kenya

- 
- > High electricity retail prices
 - > Ambitious and Successful Rural Electrification
 - > Elaborated Regulatory Framework
 - > Competition on Price and Quality

Opportunities

- > Overcapacity in the public grid projected to grow
- > Consolidation of EPCs: “survival of the fittest”
- > Sub Standard Products distort the market

Challenges

Way Forward

- > Focus on Private Offtakers (Commercial and Industrial)
- > Net metering policy/ feed in regulations not feasible
- > Niche opportunities in rural electrification
- > Market increasingly shifting towards higher quality solutions
- > Urgency to act: Regulatory frameworks for self consumption may deteriorate



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