THREATS & OPPORTUNITIES OF NET METERING AND MSBM PHASE 1B

ERONGO red
power to the people

ERONGO RED

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Definitions

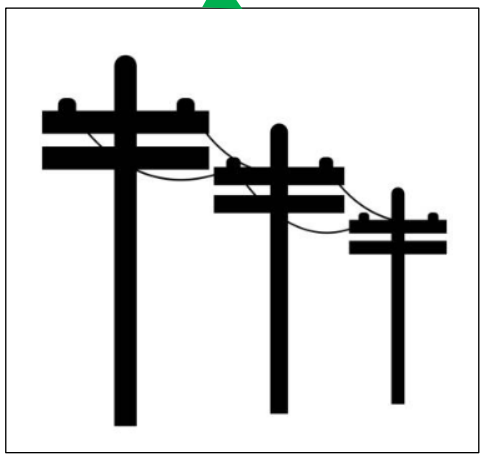
Definitions

Net Metering	On-site generation facility with capacities not exceed the electricity supply circuit breaker current rating converted to kVA, which may not exceed 500kVA.
MSBM Phase 1b	Distribution connected customers connected at 1MVA and above will be allowed to purchase up to 30% of their energy demand from eligible generators or traders.

Definitions

GENERATION:
Total energy produced by a generation systems.

SELF-CONSUMPTION:
Energy a customer/prosumer consumes directly from the generation system in real time, as generated.



GRID EXPORT:
The surplus energy exported to the grid after self-consumption

Threats & Opportunities of Net Metering

(Erongo RED as Case Study)

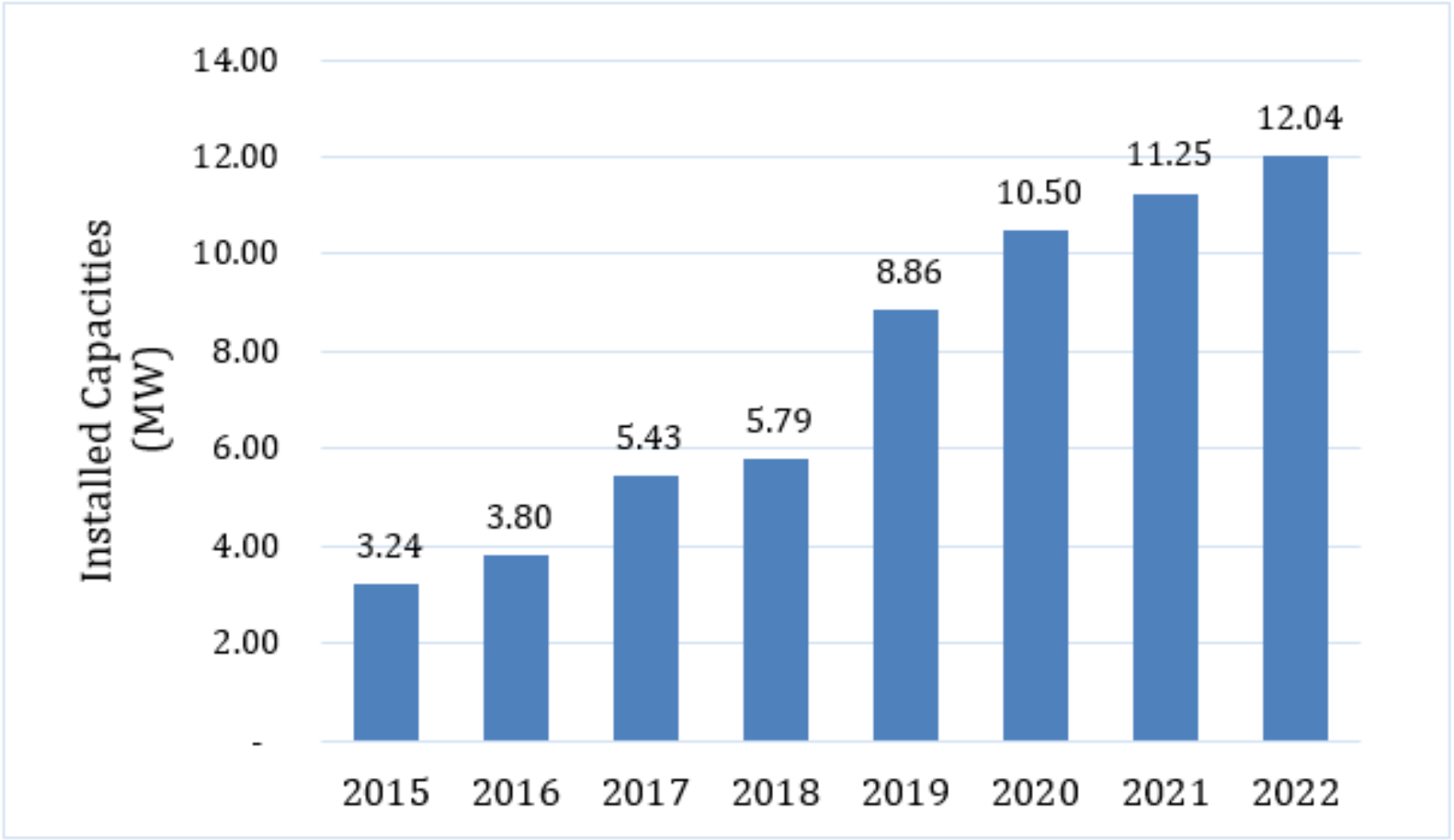
Threats & opportunities of Net Metering

No	Opportunities of Net Metering to distributors
1	Surplus energy from on-site generation facility is exported to the grid
2	Distributors compensate customers with net metering credits at avoided costs (distributor purchase energy at avoided cost only)
3	Distributors save on NamPower's Transmission Loss Charges
4	Distributors save on NamPower's Reliability Charges
5	Distributors save on ECB & NEF levies
6	Unused net metering credits are written off at the end of each financial year (this is free energy)

No	Threats of Net Metering to distributors
1	Generation for own consumption has reduced customer's energy requirements from the grid
2	This has reduced volumetric sale of energy by distributors
3	Revenue loss by distributors
4	Introduced new competitors for distributors (SOLAR PV ROOFTOP RENTAL/LEASING COMPANIES)
5	Customer's bargain power has increased (dependency on distributors has reduced)
6	Grid exports in areas with a high uptake of PV and low load may not have economical value to distributors.
7	Uncontrolled grid exports in areas with a high uptake of PV may create technical constraints to the grid.

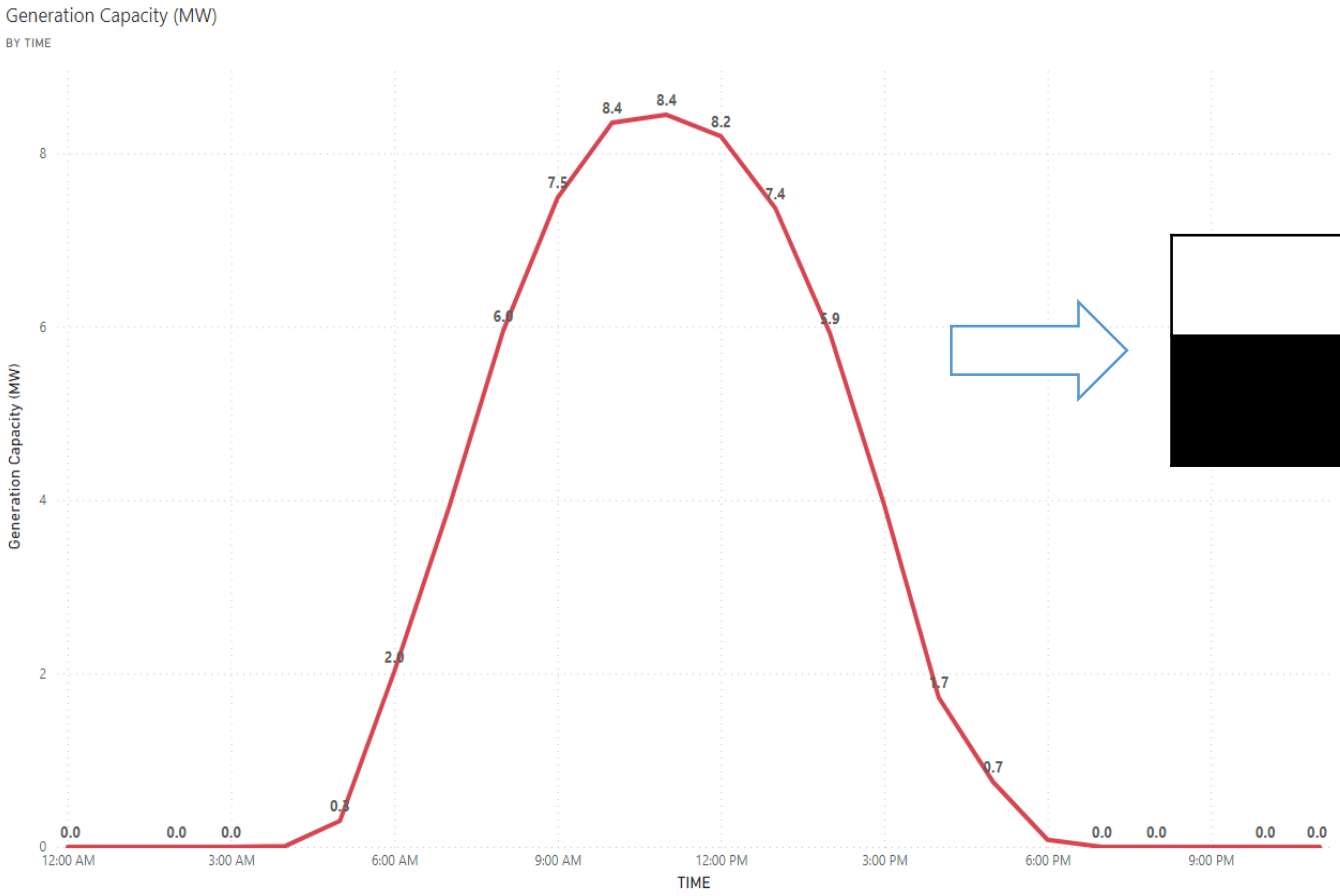
Threats & opportunities of Net Metering

Threats & opportunities of Net Metering: Erongo RED



Threats & opportunities of Net Metering: Erongo RED

12.04 MW Solar PV



	Off-Peak (kWh)	Standard (kWh)	Peak (kWh)	Total Energy (kWh)
Energy (kWh)	4,463,598.60	13,390,795.80	4,463,598.60	**22,317,993.00**

Threats & opportunities of Net Metering: Erongo RED

Revenue loss to distributor

a) Approximately N$ 44.40 Million revenue loss ≈ N$ 3.70 Million revenue per MW

b) Approximately *N$ 12.4 Million gross profit loss ≈ N$ 1.00 Million gross profit loss per MW*

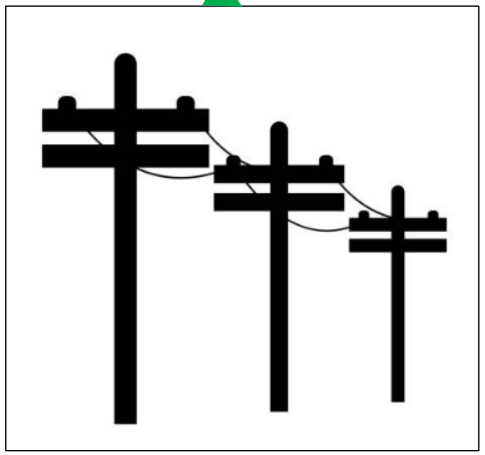
GENERATION:
22,317,993.00 kWh

Revenue gain to distributor
Approximately N$ 1.70 Million revenue gain ≈ N$ 0.14 Million revenue gain per MW

SELF-CONSUMPTION:
18,816,967.00 kWh

Revenue Loss to distributor
- Self-generation – self consumption
- Reduced energy from the grid

Revenue gain to Distributor
- Save of Transmission loss charges
- Save on reliability charge
- Save on ECB and NEF levies
- Net Metering Credits written-off



GRID EXPORT:
3,501,026.00 kWh

Threats & opportunities of Net Metering: Erongo RED

Revenue loss

Approximately N$ 44.4 Million revenue loss ≈ N$ 3.7 Million revenue loss *per MW.*

Revenue loss

Approximately N$ 32 Million revenue loss ≈ N$ 2.7 Million revenue loss *per MW.*

Revenue loss

ECB
Approximately N$ 0.47 Million revenue loss ≈ N$ 39,000 revenue loss *per MW.*

NEF
Approximately N$ 0.35 Million revenue loss ≈ N$ 29,000 revenue loss *per MW.*

Threats & Opportunities of MSBM Phase 1B

(Erongo RED as Case Study)

Threats & Opportunities of MSBM Phase 1B: Erongo RED

No	Opportunities of Net Metering to distributors
1	Benefiting from wheeling charges if eligible sellers use the distribution network to wheel energy to the contestable customers.

No	Threats of Net Metering to distributors
1	Generation for own consumption has reduced customer's energy requirements from the grid
2	Reduced volumetric sale of energy by distributors
3	Revenue loss by distributors
4	Introduced new competitors for distributors (Eligible Sellers)
5	Customer's bargain power has increased (dependency on distributors has reduced)

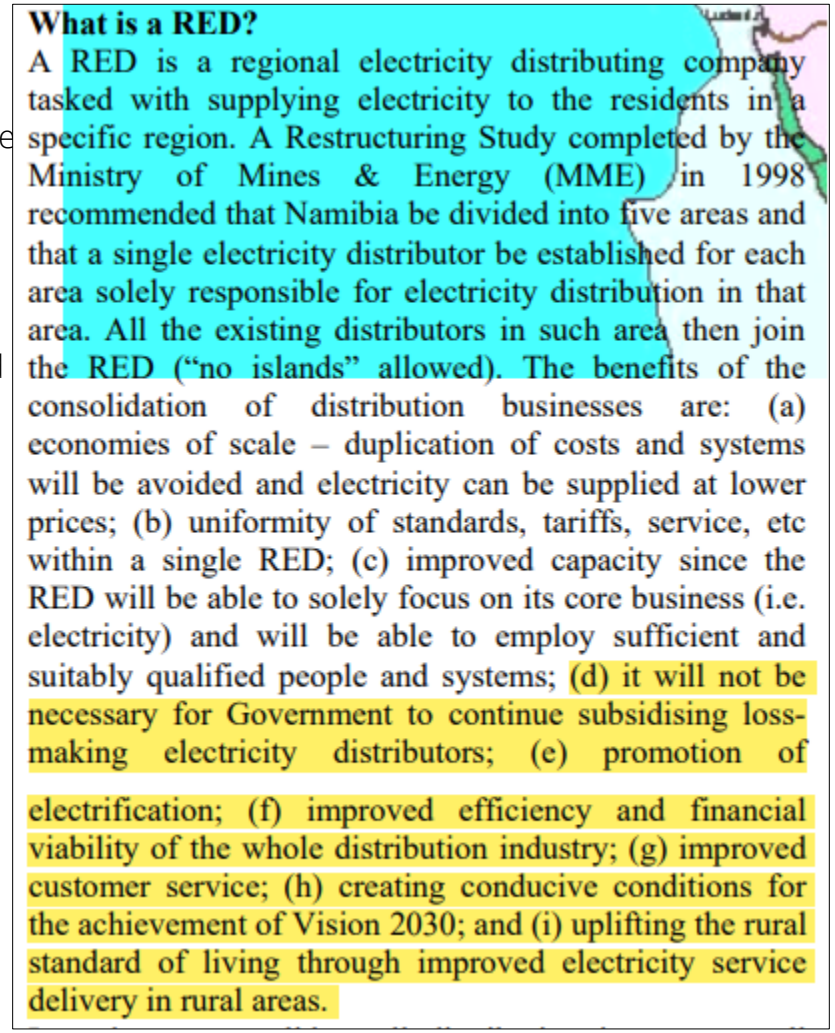
Threats & Opportunities of MSBM Phase 1B: Erongo RED

- Erongo RED has thirteen (13) contestable customers in Walvis Bay only (customers with NMDs ≥ 1MVA)
- 2 of the 13 contestable customers are already approved by the ECB. Their IPPs have applied for generation licenses at ECB with proposed capacities of 5.59 MW.
- These contestable customers will get 30% from IPPs. Erongo RED will lose 30% of revenue from these customers. NamPower will equally lose this revenue.
- Contestable customers are placing generation plants on their own sites, therefore NamPower & distributors will lose out on targeted wheeling charges.

Impacts of Revenue Losses to Distributors

Impacts of Revenue Losses on Distributors

- Distributors would not afford to provide subsidised tariffs (social tariffs).
- Distributors would not afford to fund projects with low returns on investment (such rural ele
- Distributor's ability to pay creditors will be affected.
- Distributors would not afford maintenance costs, which may compromise the reliability and
- The above may lead to retrenchments as a measure to cut costs.
- Distributors will request high tariff increases to counter the impacts of revenue losses.
- Electricity will become unaffordable.
- Wealthy customers will go off-grid (while the poor masses will remain connected to the grid
- Companies depending on distributors, such as suppliers & consultants will be impacted.
- Death spiral of distributors



What is a RED?

A RED is a regional electricity distributing company tasked with supplying electricity to the residents in a specific region. A Restructuring Study completed by the Ministry of Mines & Energy (MME) in 1998 recommended that Namibia be divided into five areas and that a single electricity distributor be established for each area solely responsible for electricity distribution in that area. All the existing distributors in such area then join the RED ("no islands" allowed). The benefits of the consolidation of distribution businesses are: (a) economies of scale – duplication of costs and systems will be avoided and electricity can be supplied at lower prices; (b) uniformity of standards, tariffs, service, etc within a single RED; (c) improved capacity since the RED will be able to solely focus on its core business (i.e. electricity) and will be able to employ sufficient and suitably qualified people and systems; (d) it will not be necessary for Government to continue subsidising loss-making electricity distributors; (e) promotion of electrification; (f) improved efficiency and financial viability of the whole distribution industry; (g) improved customer service; (h) creating conducive conditions for the achievement of Vision 2030; and (i) uplifting the rural standard of living through improved electricity service delivery in rural areas.

Impacts of Revenue Losses to NamPower

Impacts of Revenue Losses to NamPower

- NamPower will request high tariff increases on the remaining 70% to counter the impacts of revenue losses caused by Net Metering & 30% taken by MSBM
- Electricity will become unaffordable.
- NamPower's ability to pay creditors will be impacted.

NamPower 'loses' N$2 billion

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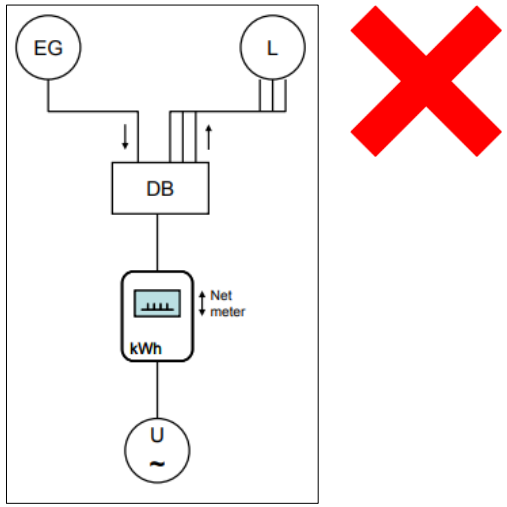
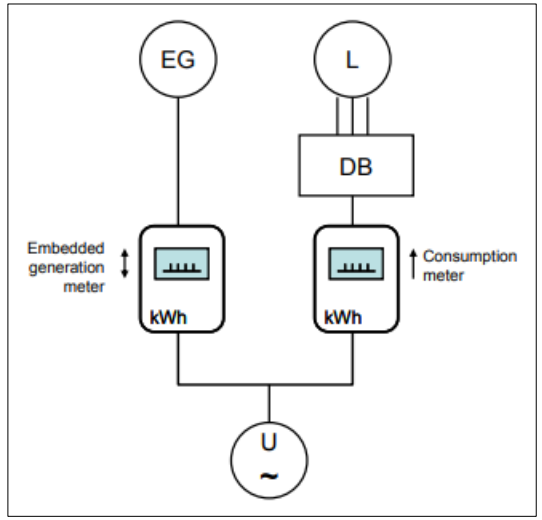
Mitigation Measures for Net Metering Revenue Losses

Mitigation Measures for Net Metering Losses

- Distributors should issue zero export limits on networks where energy exported by rooftops does not generate economic benefit to the distributor.
- Distributors should challenge the ECB to put an end to solar rooftop rental/leasing business, which is based on performance adjustments.
- Distributors should educate customers about the pros and cons of self-generation to avoid losing customers to rooftops unnecessarily.
- Distributors & ECB should explore the viability to purchase generated energy from consumers at avoided cost and compensate them in cash.





Mitigation Measures for MSBM Phase 1B Revenue Losses

Mitigation Measures for MSBM Phase 1B Revenue Losses

- Distributors should study lessons learnt from existing generation projects to avoid dire financial consequences, especially on the escalation of IPP tariffs.
- Distributors should propose amendments to legislation to allow distributors to compete with Eligible Sellers competitively. This can only happen if Distributors are allowed to approach contestable customers directly and give them better offers.
- The ECB should allow distributors to charge a distribution reliability charge on contestable customer's energy, like NamPower is doing.
- Distributors should seek energy supply contracts for shorter durations from existing or new generators, rather then getting IPPs to build plants and entering long-term contracts.
- Distributors should challenge the ECB to make energy bought from SAPP contestable instead, rather than disrupting the current chain of supply, which has brought an unhealthy competition between NamPower and Distributors.

SAPP ----------> NamPower ----------> Distributor ----------> End-customers

Protecting the Existing Electricity Supply Industry (ESI)

Protecting the Existing Electricity Supply Industry (ESI)

- The ministry of Mines & Energy, and NamPower should pursue cheaper alternative means of generation to create baseload and reduce tariffs to ordinary end-users.

- The ECB should not bind NamPower and Distributors to old market rules because the markets it has created (MSBM & Net Metering) are very competitive.

- The ECB should closely monitor the progress and impacts of the MSBM to the ESI to avoid catastrophic man-made energy crisis in the country.

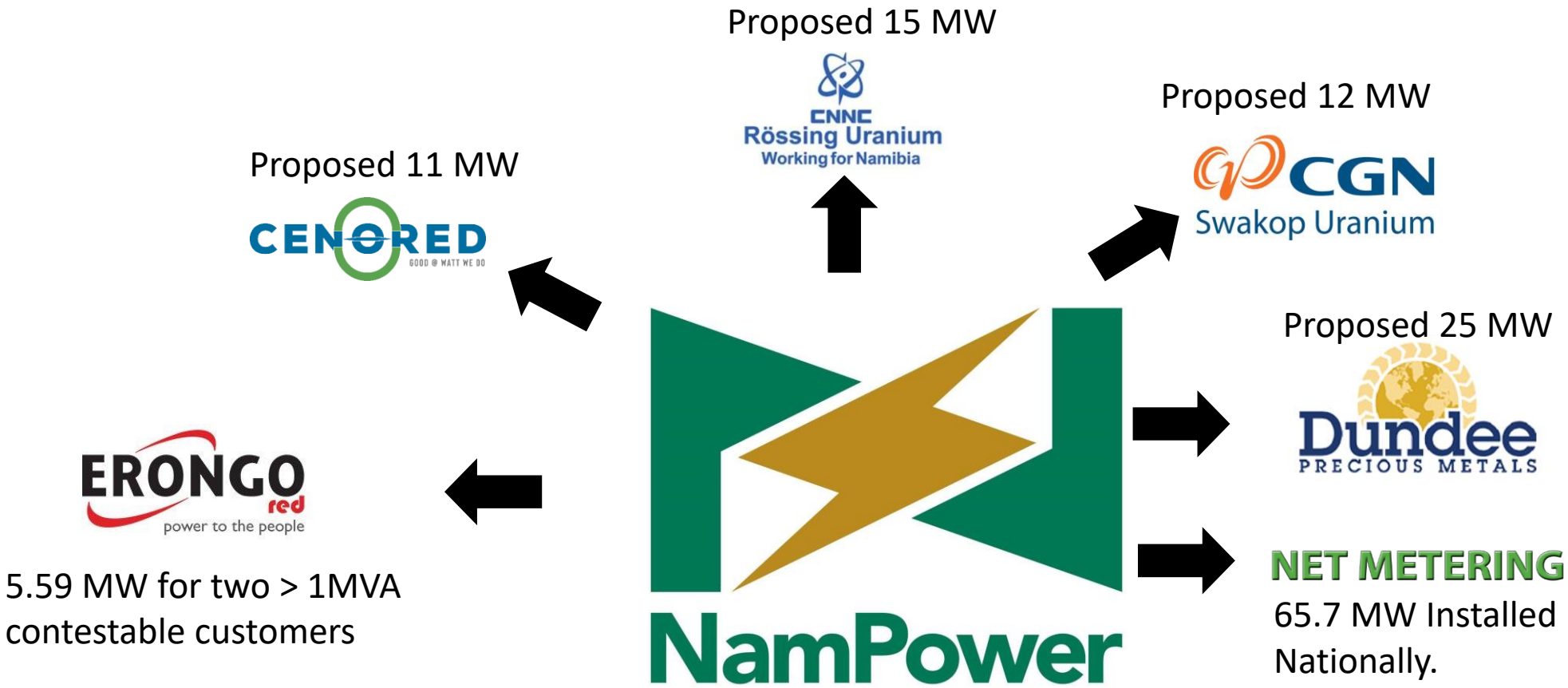
- The ECB should ensure that Eligible Sellers in the MSBM also contributes to social course projects such rural electrification.

- Distributors should challenge the ECB to make energy bought from SAPP contestable instead, rather than disrupting the current chain of supply, which has brought an unhealthy competition between NamPower and Distributors.

SAPP ----------> NamPower ----------> Distributor ----------> End-customers

Home Work

Home Work: How does this projects reflect on NamPower?



Approximately 159.29 MW, Revenue loss?

Home Work

- What would this revenue losses mean to NamPower?
- How would NamPower & ECB react to these losses in terms of tariff increases?
- What would the tariff increases mean to Distributors?
- What would the tariff increases mean to electricity affordability?
- What would the tariff increases mean to ordinary electricity consumers?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