

Rethinking business models for network service providers

Shadow pricing against storage?

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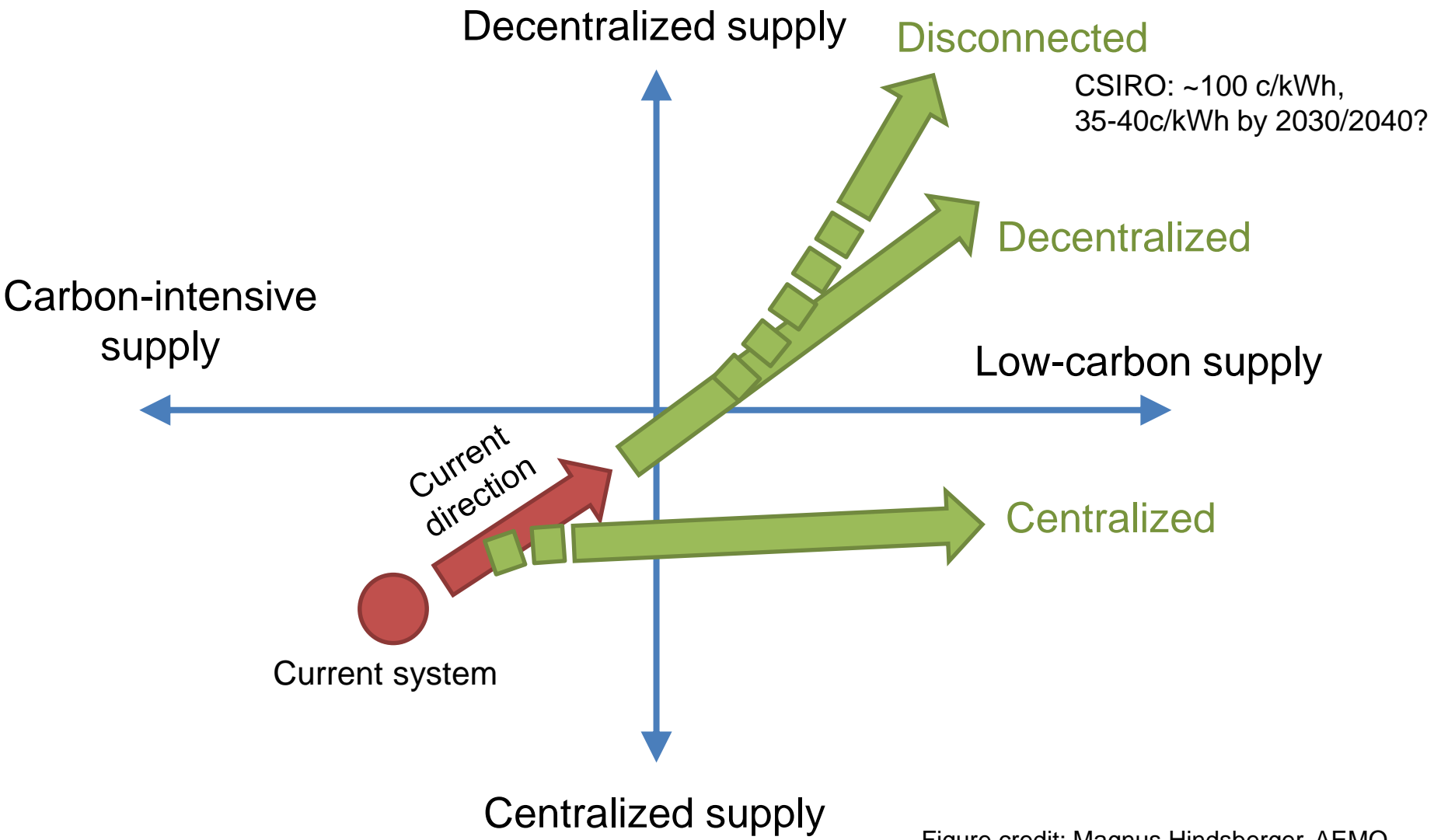
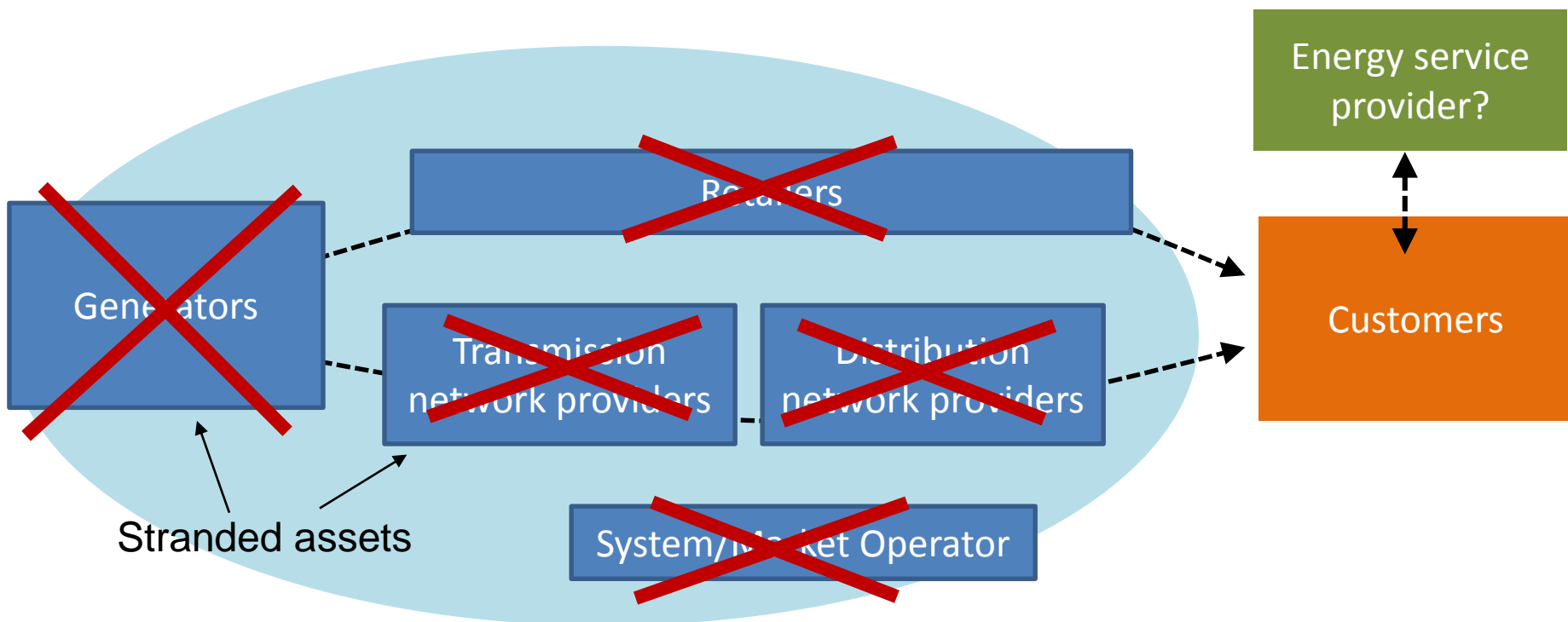


Figure credit: Magnus Hindsberger, AEMO



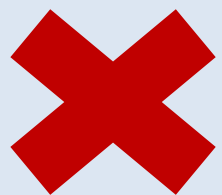
- Complete transformation for electricity industry?



Low probability
+
“Catastrophic” consequences
↓
High Risk!

Worthy of a “thought experiment”

What is in the best interests of *consumers*?

| | Circumstance 1: Centralized scenario is lower cost | Circumstance 2: Disconnected scenario is lower cost |
|----------------------------------|--|---|
| Centralized supply continues |  |  |
| Majority of customers disconnect |  | <p>Complicated by sunk costs in existing assets: need to facilitate a <i>slow transition</i> (no further capital investment, but continue to use existing assets)</p> |

Considerable uncertainty – how should policy makers respond?

Cost-reflective pricing

- Generally accepted to be a good idea, but...
- Highly non-trivial in practice
- What does it really mean?
 - Cost recovery? (including sunk costs?)
 - Providing accurate price signals to consumers?
 - O&M?
 - Augmentation?
 - Locational differences?

| | Circumstance 1: Centralized scenario is lower cost | Circumstance 2: Disconnected scenario is lower cost |
|----------------------------------|--|--|
| Centralized supply continues | <p>NSPs implement pricing that reflects the lower cost of the centralized network, and establish customer trust</p> | <p>Inefficient subsidies for centralized supply?</p> <p>Temporary transition to disconnection?</p> |
| Majority of customers disconnect | <p>NSPs are inefficient and don't provide pricing that reflects their lower costs</p> <p>(or fail to engage positively with customers?)</p> <p>(or inefficient government subsidies for DER + storage?)</p> | <p>Pricing reflecting higher costs of centralized network could cause rapid disconnection and stranding of existing network assets.</p> <p>Transition could be slowed with <i>shadow pricing</i> approach.</p> |

Need to think beyond cost-reflective pricing

Shadow Pricing

- **IF** cost effective DER + storage provides a realistic alternative to centralised network services
 - Disrupts the “natural monopoly” long held by NSPs (disruptive competition)
 - NSPs becoming part of a competitive industry
 - Price *competitively*, rather than cost reflectively
- *Shadow price* against the main competitor
 - Price just below the cost of storage + DER
- Necessitates write-down of network asset value
 - Acknowledge that full cost recovery is no longer possible, but facilitates maximum utilisation of existing assets
 - Government subsidy, in the case of government owned assets, *but still lower cost to consumers* than the alternative rapid disconnection scenario.

How can NSPs prepare?

- Commence careful tracking and sophisticated forecasting of storage prices
- Implement flexible tariff setting approaches that adapt to storage prices
 - If storage cost is projected to become lower than centralised network cost-recovery prices, implement shadow pricing against storage
- Engage with AER to ensure this can be implemented
 - Extensive regulation may not be required in the long term (*only* in the case of a full transition to a competitive market)
- Consider offering a range of reliability levels to customers, at different prices
- Build trust with consumers
- Consider partnership with retailers
 - AER – what degree of vertical integration is desirable?

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