

GridExchange Platform

Blockchain backed Energy Transactions

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Who is Alectra?

Alectra is an energy company that distributes electricity and provides innovative energy solutions to customers in Ontario

Second largest municipally-owned integrated energy solutions company in **North America**

Over **C\$4.5 billion** in assets and **1,500 employees**

Serving over **1 million customers** across **1,921 sq kms**

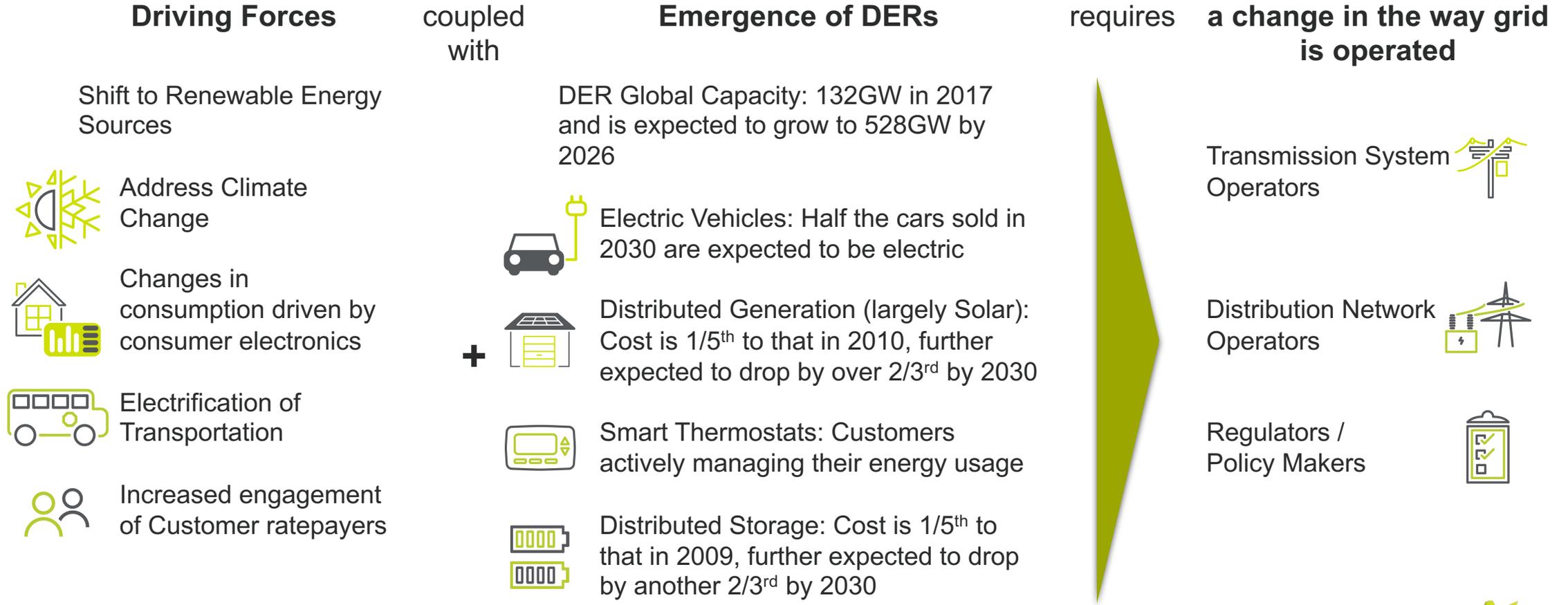
Two subsidiaries:

- **Alectra Utilities:** responsible for distributing electricity to residents and businesses
- **Alectra Energy Solutions and Services:** provides innovative energy solutions, such as microgrids, energy storage, solar PV, metering, and street lighting



How the current landscape is changing

The electrical market is being transformed by many forces which requires a change in the way we operate today



GridExchange Platform

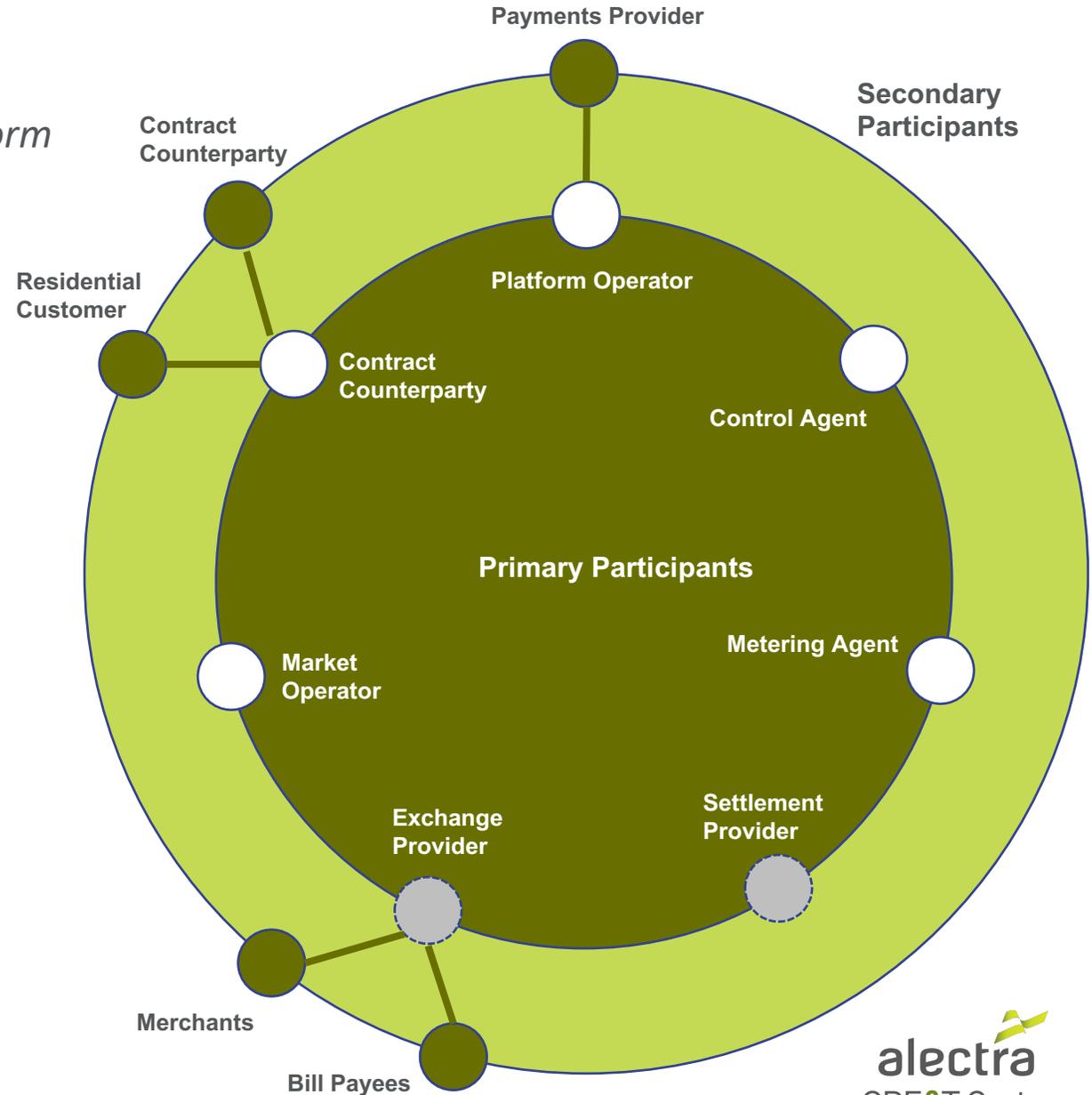
Alectra's approach for Transactive Energy Platform



A software platform to facilitate a **wholesale ↔ distribution ↔ end user** marketplace for energy products, including contracting, delivery, and settlement, based on enterprise blockchain technology



Blockchain based transaction management enables smart procurement, contracting, verification and settlement of services for different participants and stakeholders



GridExchange Services

In the pilot phase, GridExchange will enable three major market services

Reduce load on transformers serving residential customers by limiting the rate of charge for electric vehicle charging stations according to user tolerance and propensity to earn rewards

Managed EV Charging



During times in which the energy supply from large-scale generation within a jurisdiction has a greater proportional dependence on fossil-fuel burning sources, encourage households to prioritize usage of solar to meet residential load requirements (even if not traditionally economically optimal)

CO2 Reduction



Allow homeowners to leverage battery storage capacity to participate in scheduled demand-response programs

Demand Response



GridExchange benefits

For End-User and Contract Counterparties

End-Users

Improved resilience and reliability towards outages

Cost savings due to their energy contributions to the grid

Better control over their energy assets providing a better sense of ownership over their assets

Ability to make **more informed decisions** regarding energy contributions based on aggregated & localized recommendations

Earn rewards to obtain value-added services with respect to the positive change in their behavior for energy contribution

Increased transparency by having access to information about their energy consumption/generation (renewables vs fossil)

Become a **contributor towards the global initiatives** around reducing GHG and carbon footprint

Contract Counterparties

Improving customer trust by providing customers full transparency & control over their energy assets, contribution, helping optimize their energy participation and cost benefits

Reducing overall cost for entire customer base towards their energy consumption

Obtaining benefits around **deferring capital and operating expenditures** associated with infrastructure upgrades, planning, and grid resource balancing

Improved visibility towards the changing market and DER penetration to better inform network planning decisions

Empowering customers by enabling them to participate in larger energy demand response needs. Further, empowering them to become part of larger global initiatives towards reducing GHG and Carbon footprint



GridExchange benefits

For Market Operators, Technology Providers and Corporate Partners

Market Operators

Increased visibility over the network to help achieve improved decision making towards immediate demand response requirements. Ability to gain a view into the DER landscape in the region that was not previously available

Improved decision making towards longer-term energy needs resulting in infrastructure upgrades due to overall improved visibility. Further helps in infrastructure upgrade deferral in cases of significant increase in DER penetration

Ability to **optimize the energy supply** and gain **access to cost effective demand response capacity** in the wholesale market by leveraging aggregated DERs

DERMs/ADMS technology providers

Opportunity to **integrate to a larger ecosystem** of multiple utilities and technology partners

& Corporate partners

Opportunity to **increase their customer base** and **increase revenues** by participating in new markets and gain access to industry analytics which will improve the efficiency of their planning and targeting. As a result, they will have greater opportunities to generate new value propositions and be much more agile in responding to market needs

Ability to **improve their platform, models and overall technology** through access to cross-functional data and learnings

Corporate Partners specifically will have an additional benefits to band value augmentation through association with efficient energy. They will get **low cost access to customers** of their products

Key factors to success

There are many different external factors which could impact the success of Transactive Energy market

- DER growth accelerates and continues
- Incentives for utilities to use non-wire alternatives become compelling and common
- Regulatory changes increasingly allowing the utilities to control customer owned DERs
- DER aggregators and ADMS/SCADA vendors align to interoperable interface standards
- Utilities can enroll DER owners onto the network quickly and easily
- Corporate and financial partners keep supporting the development of the ecosystem
- New use-cases emerge to improve stakeholder buy-in and customer trust



Q&A

Thank You



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