Lesson’s Learned: Electrification
November 2\textsuperscript{nd}, 2023
1. Company Introduction
2. Problem and Solution
3. Journey in Progress
Company Introduction
Hydro One Overview

Transmission
- 37 LDC customers
- 85 Large directly connected industrial customers
- 30,000 Transmission lines (circuit km)
- 306 Transmission stations in service

Distribution
- 90 LDC’s consolidated since 1999
- 125,000 Distribution lines (circuit km)
- 1.5M Distribution end customers
- 1,000 Distribution and regulating stations

92% of Ontario’s transmission capacity
75% Geography covered
Unregulated Businesses

Telecommunications
Launched in 2000 as Hydro One Telecom, Acronym focuses on Internet and Network Solutions

Business to Consumer
Launched in 2020, Ivy Charging Network deployed the largest EV network in Ontario, working in partnership with OPG

Business to Business
Launched in 2022, AUX Energy was formed to help businesses achieve electrification goals

Growing Focus on Innovative Offerings
AUX’s Mission for Ontario

Accelerate the use of sustainable electrification technologies in Ontario

- **AUX Fleet Charging**: Turnkey charging-as-a-service for heavy-, medium-, and light-duty fleets
- **AUX Battery**: GA mitigation, reliability, and energy markets
- **AUX Energy Solutions**: Behind the meter electricity services for select customers
Problem & Solution
Six Problems Stopping Electrification for Small and Medium Municipalities

*What is impacting electrification?*

1. Increasingly complex energy needs
2. Lack of established service providers
3. Changing technological landscape
4. Aggressive government mandates
5. Supply chain struggles
6. Challenging funding / financing needs

The combination of all these issues makes it incredibly difficult to begin electrification.
AUX’s Role in Electrification

Power Experts
Deep knowledge of the energy sector

Deployment History
EV charger deployments across Ontario

Strategic Advisor
Help future proof your investments

Financial Backing
Use purchase power to enable companies to electrify

Trusted Provider
Capable and Ontario focused provider

Supply Chain
Leverage scale and relationships
What is Energy as a Service (EaaS)?

• Convert upfront capital expenditures to yearly operational expenses / savings
• Providing turnkey deployment of energy solutions for EV’s and batteries
• One source for energy expertise by de-risking your energy transition
Fleet Electrification Journey

Fleet electrification journey has six main steps that are divided between the municipality’s Business Choices and Execution.

**BUSINESS CHOICES**
- Early Consulting
- Strategic Deployment
- Front-End Engineering

**EXECUTION**
- Detailed Engineering
- Project Execution
- Long-term Performance
Electrification Activity Examples

**Charging Infrastructure**

- **Grid connection**
  We handle utility applications & interconnection coordination while solving problems with the utility

- **Onsite make ready**
  We design, build and commission the sites, solving any inevitable issues that arise

- **Charging equipment**
  We source charging equipment & required electrical equipment and manage any procurement issues

**Ongoing Operations**

- **Operations & maintenance**
  Provide both corrective and preventative maintenance to ensure uptime, keeping a stock of necessary spares

- **Network management**
  We monitor the chargers to ensure uptime and track utilization, improving electric fleet operations

- **24/7 Service**
  We monitor 24/7 with the goal of discovering and resolving issues through remote diagnostics & restart
How to overcome the problems?

What is impacting electrification?

1. Increasingly complex energy needs
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Bluewater Recycling Example #1

1. Increasingly complex energy needs
Bluewater Recycling Example #2

2. Lack of established service providers
Bluewater Recycling Example #3

3. Challenging funding / financing needs
Appendix: Case Studies
Case Study #1

Power Experts

Deployment History

Ivy Charging Network

Problem: In 2018, the EV charging landscape was fragmented, highly unreliable, and failed to cover most of the Province.

Solution: Secure Federal Funding, develop partners, and deploy critical EV charging infrastructure at all Ontario ONroutes as well as in the rural and northern towns. Today Ivy has deployed 150 fast chargers and 63 Level 2 Chargers.

Key Learnings:
- Ontario's fragmented utility landscape creates unique challenges in Province-wide deployments
- Local network support essential to success
- Partnerships essential in the growing EV charging market
Problem: Retailer seeking support in managing EV charging installation in context of staggered EV truck deliveries, and supply chain issues, while also planning for long-term.

Solution: Integrate charging-as-a-service offering to include consulting, future-proofing, and creative solutions that meet both short term needs and long-term planning by developing temporary EV charging solution to accommodate for early EV deliveries, structuring financing to meet truck delivery schedule, and building additional make-ready infrastructure.

Key Learnings:
- Fleet delivery schedule remains a significant issue
- Flexibility of charging-as-a-service effective tool for managing this constraint
- Deep understanding of client needs can allow for maximization of value per deployment
Case Study #3

Financial Backing

Securing Funding

**Problem:** Provincial funding for commercial / transit EVs is not currently at par with Quebec or BC, slowing down Ontario's deployment.

**Solution:** Leverage our balance sheet and strong market reputation to seek funding on spec, and/or to finance partners as they seek their own funding. To date, we’ve secured ~$5M in funding for our clients and are currently financing clients as they seek additional funding for electrification.

**Key Learnings:**
- There is strong appetite to deploy in Ontario, but access to funding is becoming a barrier
- Federal government can be a strong and flexible partner when requirements are well understood
- Financial planning remains a significant challenge as costs and requirements still unknown
Case Study #4

Supply Chain

Problem: On this deployment, a transformer was unavailable for over a year due to utility's lack of inventory and ongoing supply chain challenges.

Solution: Working with our parent company we were able to get delivery down to one month.

Key Learnings:
- In supply chain constrained market, strong relationships a key to success
- Utilities have capability to be flexible, but requires strong understanding of their dynamics
Putting it All Together

- Aux is reflective of Hydro One's commitment to Ontario's electrification
- Aux brings the benefit of Hydro One's 110 years of providing energy services to Ontario
- Aux is focused on the providing innovative energy solutions to Ontarians, enabling the energy transition to achieve the shift to a low-carbon economy
Thank you for your Time!
www.AUXEnergy.com