Solar and Storage for the GTHA

Aakash Harpalani
Director, Clean Energy

July 18, 2024

TAF

Objectives of TAF's Electricity Systems Focus Area

Decarbonize the electricity supply

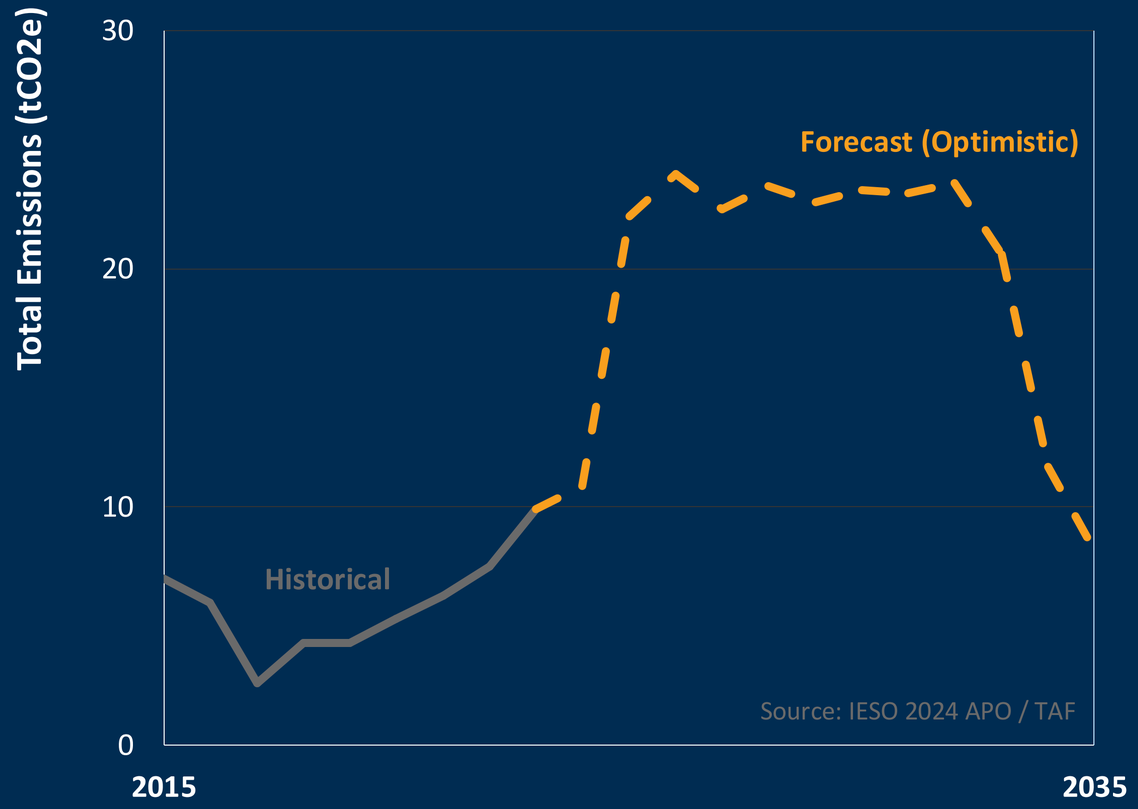
Modernize the grid to support economy-wide electrification

Energy affordability for all

The Context

CHALLENGE #1

Emissions from Ontario's grid are forecasted to rise significantly in the next few years, with uncertainty beyond that.



CHALLENGE #2

After remaining flat over the last decade, demand is expected to increase by 50-75% by 2040.

The Solutions

Reduce Grid Emissions

Build non-emitting supply

Ramp down gas-fired generation

Reduce Electricity Demand

Energy efficiency

Conservation

Optimize Grid Utilization

Load flexibility

Energy storage

Engagement in Policy and Planning Initiatives

1 | Federal Clean Electricity Regulations (CER)

Exemptions for gas-fired generation will set upper bound for grid intensity.

2 | Provincial Long-Term Supply Procurements

Ensure municipalities are equipped to consider energy project proposals.

3 | Integrated Regional Resource Planning

Ensure full consideration of non-wires alternatives (NWAs), explore alternatives to Portlands Energy Centre.

4 | Conservation and Demand Management (CDM)

Prioritize all cost-effective efficiency and demand-side measures.

TAF's Focus: Scale Local, Distributed Energy Resources

1 | LOAD FLEXIBILITY

- ✓ Advocate for clear compensation and regulatory frameworks
- ✓ Support for LDCs in creating rate-based programs
- ✓ Funding for demonstration projects and pilots

2 | LOCAL GENERATION

Local Solar and Storage

- ✓ **The GTHA is transmission-constrained**
- ✓ **Proven technologies that have achieved scale in other jurisdictions**
- ✓ **Addresses both energy and capacity adequacy needs**
- ✓ **Economically viable (in the right conditions) today**
- ✓ **Strong local alignment already exists**

On a least-cost net zero pathway, behind-the-meter (BTM) solar adoption needs to contribute 2-4% of load in 2050. **This requires scaling BTM solar by 20-40x over the next 25 years.**

Policy churn and lack of sustained momentum, however, has led to a sizable drop in BTM installations in Ontario relative to a decade ago.

A Solar and Storage Program in the GTHA

INITIAL FOCUS: Residential, but with intent to mobilize adoption across all sectors.

Education and Outreach

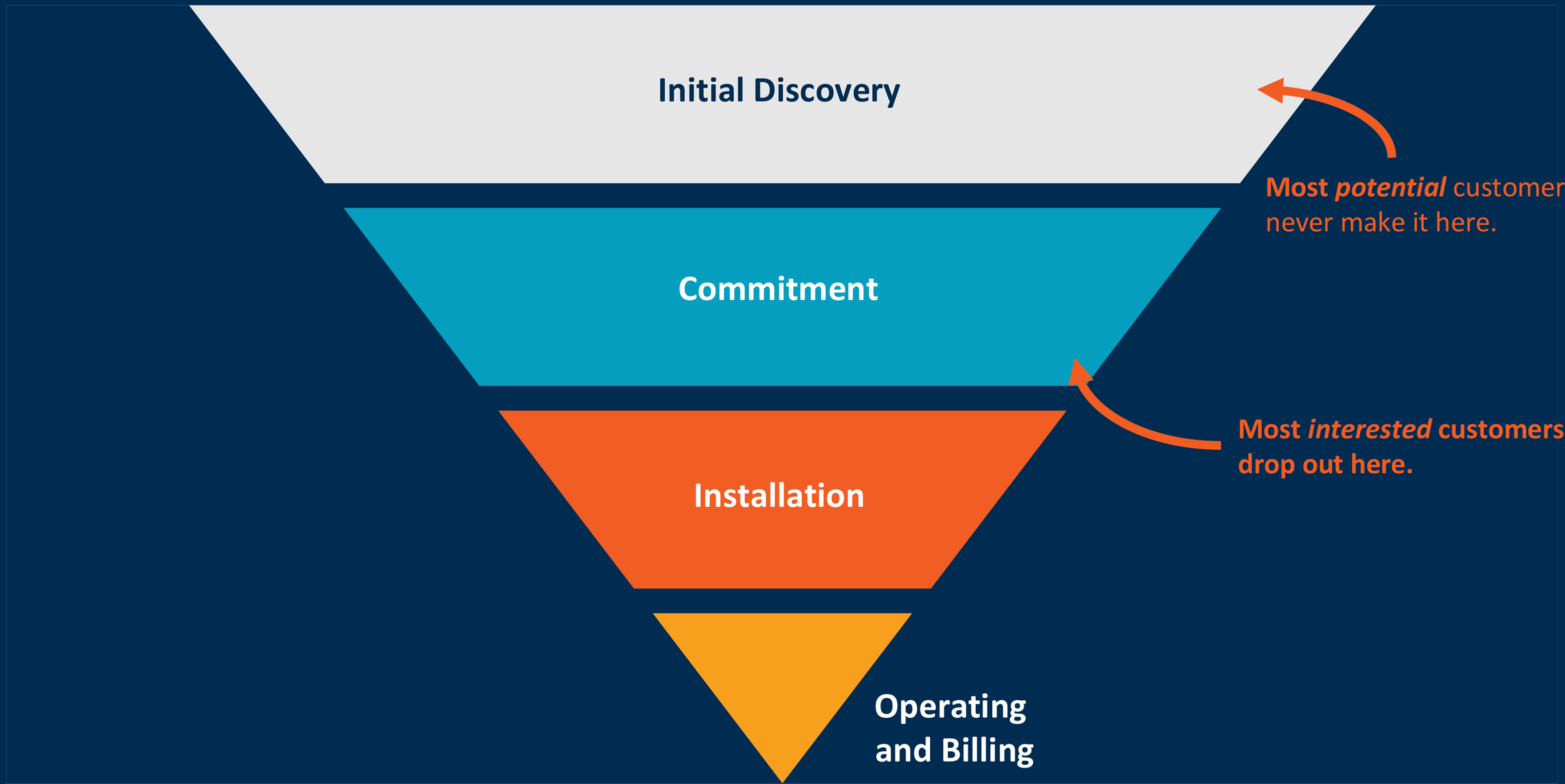
Handholding

Contractor Matching

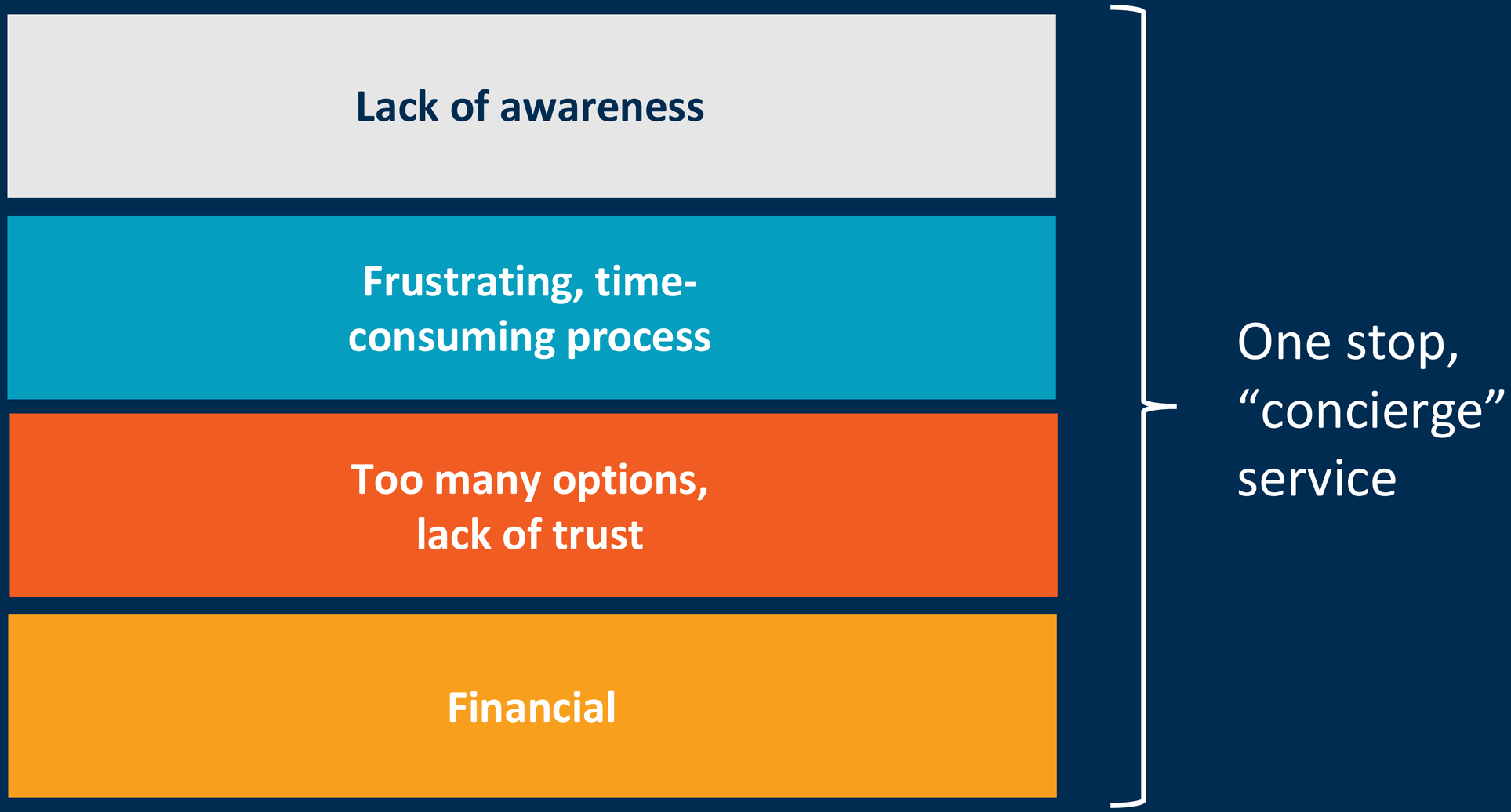
Rebates and Financing

Focus on solar with storage as an optional add-on

Program Design: support the customer journey



Program Design: address the pain points and barriers



Program Design: streamline regulations and approvals

INTERCONNECTION AND PROCESS FEES

- ✓ Work with utilities and OEB to streamline and standardize processes
- ✓ Increase microgeneration limit up from 10 kW

COMMUNITY NET-METERING

- ✓ Larger-scale projects at efficient scale and location, enabling access to clean energy for all

COMPENSATION FOR DISTRIBUTED STORAGE

Program Design: coordinate funding and financing

In the long-term, residential solar systems offer a decent return but carry a significant upfront cost. Easy access to capital to finance these systems is a barrier to adoption.

TAF will aim to address this through:

1 | Ensuring the business case is well understood by customers

2 | Lowering the cost of ownership through soft cost savings

3 | Facilitating access to public funding and financing

4 | Mobilizing and enabling access to private capital

Q+A