OPG’s Role in New Nuclear and SMR Deployment – Canada Wide Vision

C. Deir
Ontario Power Generation
Update on Darlington Refurbishment – On Time and One Schedule

Approval to Proceed to Unit 3
Leveraging our Experience to Plan for the Future

**DGR**
- Long term repository for low and intermediate level waste
- Used fuel to be handled separately

**Large New Build**
- Approved Site License to build 4800MWe new capacity at Darlington site
OPG’s Approach to the Pan Canadian New Nuclear Vision

- OPG is the largest and most experienced nuclear Operator in Canada
  - OPG can play a role in facilitating resources for potential SMR and vSMR vendors

- OPG’s goals of Pan Canadian approach:
  - Align on common technology selection criteria
  - Socio-economic benefits to Canada through bulk purchasing power
  - Fleet benefits for construction, operations, maintenance, waste management and decommissioning across Canada
Positioning OPG for New Nuclear Growth

Darlington Station Refurbishment

Pickering Extended Operations and Retirement

Maintain and Renew Darlington Site Preparation License

Support Darlington at Top Quartile

2017  2022  2024  2025 and Beyond
OPG will work with Industry to drive a Pan Canadian vision aligning interests of various stakeholders:

<table>
<thead>
<tr>
<th>Application</th>
<th>Policy Driver</th>
<th>Technical Driver</th>
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<tbody>
<tr>
<td>On grid</td>
<td>Maintain leadership in nuclear value added/supply Chain</td>
<td>• SMR Grid Scale for future Growth</td>
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<td></td>
<td>Leverage uranium fuel infrastructure to increased supply chain value added</td>
<td>• 800 – 2000 MWe potential Growth</td>
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<td>• Potential further Coal replacement</td>
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<tr>
<td>Resource and Heavy Industry</td>
<td>Increased social licence for Oil Exports and Pipeline expansion</td>
<td>• Reduced Carbon Footprint in Oilsands and Remote Mining applications</td>
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<tr>
<td>Off grid</td>
<td>Improved Quality of Life and Growth Redirect subsidies to diesel for use on other priorities</td>
<td>• Reduce reliance on diesel power generation</td>
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<tr>
<td></td>
<td></td>
<td>• Reliability in supply</td>
</tr>
<tr>
<td>Canada</td>
<td>Maintain Canada position as Tier 1 nuclear country</td>
<td>• Support COP21 carbon reduction goals</td>
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<td>Increased role in advanced technology and job creation</td>
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The Pan Canadian SMR Roadmap

**Steering Committee** (Utilities, Provinces, Territories, AECL, NRCan)

**Working Groups**

1. Surveys of existing bodies of knowledge
   - Technology
   - Economics & Finance
   - Indigenous & Public Engagement
   - Waste Management
   - Regulatory Readiness

2. New analyses to fill knowledge gaps

**Visioning Workshop**

- Mississauga
  - 2 days
  - Steering Committee
  - NIOs
  - Mining Associations
  - PTAC/COSI

**On-Grid Power Workshop**

- East
  - 2 days

**Heavy Industry Workshop**

- West
  - 2 days

**Off-Grid Communities Workshop**

- North
  - 2 days

**Pre-read Material**

1. Visioning workshop attendees
2. Other stakeholders, including, but not limited to:
   - Community and Indigenous Representation
   - Industry Associations (e.g. CNA, OCNI, COG, etc.)
   - Companies in Oil Sands and Mining Industries
   - Waste Management (e.g. NWMO)
   - Academia (UNENE, McMaster, etc.)
   - Laboratories (e.g. CNI)
   - Regulators (e.g. CNSC)
   - Other Federal Departments (e.g. DND)

**Integration**

- Wrap-up “What we heard” webinar
- Follow-up discussion with stakeholders
- Consolidation of analyses
- To be confirmed: FPT Roundtable on key findings at EMMC

**Roadmap**
OPG Role in Pan Canadian SMR Roadmap

- OPG will seek to maintain its existing SPL at Darlington.
- OPG will continue discussion with provinces interested in developing grid size nuclear energy.
- OPG will support Provinces and Territories interested in vSMR technology:
  - Nuclear liaison for municipalities or utilities interested in learning more.
  - Potential for consulting or joint owner/operator model in the long-term.
- OPG will support the Federal government nuclear research endeavours.