

Pacific Decarbonized Energy Corridor — Crofton

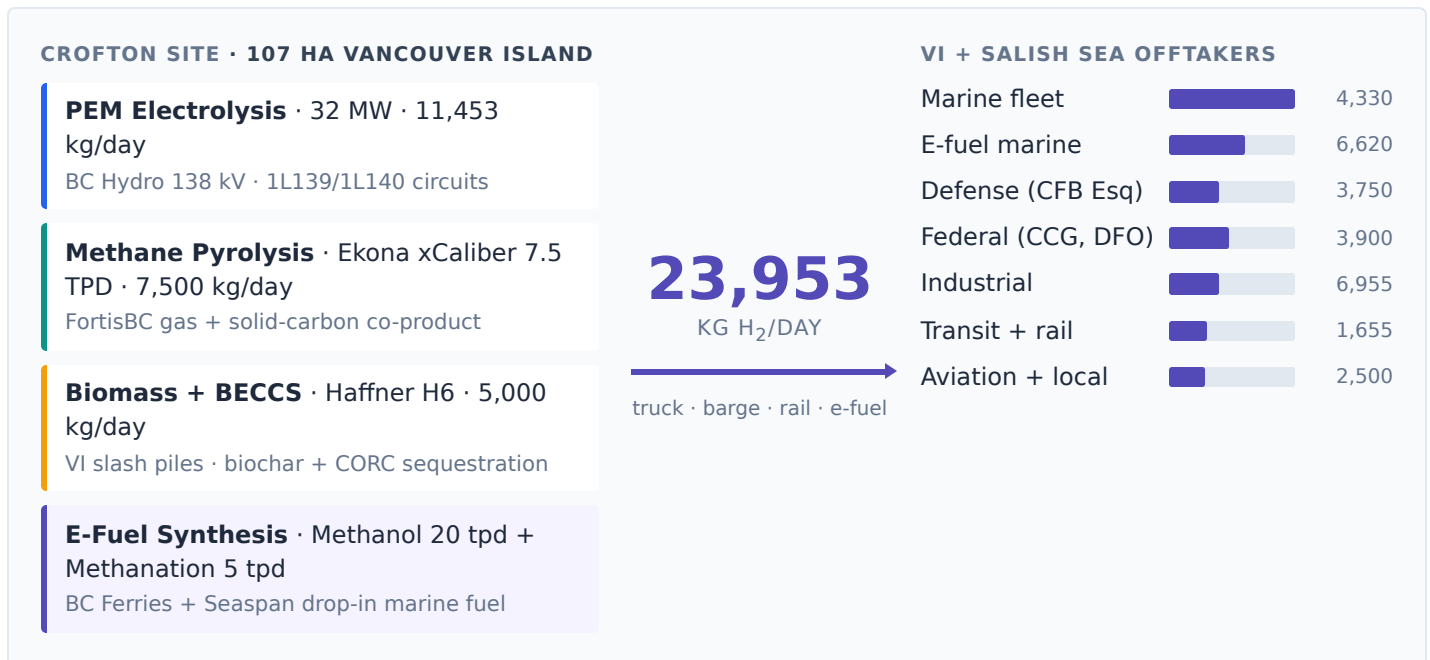
Vancouver Island tri-pathway hydrogen + e-fuel synthesis for BC Ferries, Seaspan, and industrial offtakers.

PDEC Crofton is a tri-pathway (electrolysis + pyrolysis + biomass with BECCS) clean hydrogen facility in active consideration at the former Domtar Crofton mill site (107 ha, Vancouver Island). Co-located with existing deep-water port, 138 kV BC Hydro transmission, and the Crofton water licence — the brownfield turns a tax-base loss from the December 2025 Domtar mill closure into a **carbon-negative** industrial asset. Partnership with Halalt, Cowichan Tribes, and Stz'uminus First Nations. An on-site e-fuel synthesis layer (methanol, bio-LNG, renewable diesel) supplies drop-in fuel to BC Ferries major routes, Seaspan, Howe Sound Pulp & Paper, and marine bunkering across the Salish Sea corridor.



Why Crofton

- **Site advantages:** 107 ha brownfield with existing 138 kV BC Hydro transmission (1L139/1L140), deep-water port for export via VFPA / Parkland Burnaby bridge, Crofton water licence, Vancouver Island Highway 19 freight corridor, and rail via Southern Railway of Vancouver Island.
- **Tri-pathway + e-fuel architecture:** PEM 32 MW (11,453 kg/day) + Ekona pyrolysis (7,500 kg/day) + Haffner HYNOCa biomass+BECCS (5,000 kg/day). Methanol + methanation synthesis converts H₂ to drop-in marine fuel for BC Ferries NMV class and Seaspan bio-LNG bunker supply.
- **Community & reconciliation:** Mill closure removed the biggest North Cowichan industrial employer & taxpayer. PDEC restores tax base, retains skilled workforce, and enters an equity partnership with Halalt, Cowichan Tribes, and Stz'uminus First Nations (Indigenous Loan Guarantee Program eligible).
- **Carbon-negative CI:** BECCS pathway sequesters \$2.6M/yr of biogenic CO₂ via Puro.earth CORC methodology — unlocks federal top-tier **40%** Clean Hydrogen ITC and Microsoft / Stripe / Frontier voluntary offtake.



Anchor offtakers & e-fuel pivot

- **BC Ferries** (major routes): drop-in e-methanol / renewable diesel for NMV class; up to 8,000 tpa H₂-equivalent via synthesis.
- **Seaspan Ferries**: synthetic bio-LNG via methanation, barged Crofton → Duke Point bunker.
- **Howe Sound Pulp & Paper + RDN Transit + Canadian Coast Guard** (Pacific): barge-delivered H₂ for lime kiln, FCEV wholesale, and CCG fleet (15M L/yr diesel displaced).
- **CFB Esquimalt + Asia-Pacific export** via deep-water port: base operations 2,500 kg/day; cross-corridor methanol exports to Parkland Burnaby + Pacific markets.

Federal + provincial alignment

FEDERAL

- **Building Canada Act** — PNI candidate.
- **\$5B Trade Corridor Fund** (Budget 2025).
- **Clean H₂ ITC** 40% top tier via BECCS-negative CI.
- **CCUS-ITC** 50% on capture equipment.
- **Bill C-15** 100% immediate expensing.
- **ILGP** Budget 2025 non-grind-down expansion.

PROVINCIAL

- **BC Hydrogen Strategy** — Vancouver Island regional hub.
- **CleanBC LCFS + BECCS CORC** credit stacking (\$2.6M/yr).
- **BC OBPS** performance credits.
- **DRIPA** compliance framework.

MUNICIPAL + INDIGENOUS

- **North Cowichan RTE bylaw** — 10-yr property tax shield for brownfield reuse.
- **Halalt First Nation**
- **Cowichan Tribes**
- **Stz'uminus First Nation**
- Engagement underway per DRIPA.

Canadian supply chain & partners

PRODUCTION TECHNOLOGY

- **Ekona Power** (Burnaby) — xCaliber methane pyrolysis (Gen 2 operating; 20 TPD FEED in Alberta).
- **Haffner Energy** (France/Canada) — HYNOC A H6 biomass gasification + BECCS.
- Methanol synthesis vendor LOIs under negotiation.

END-USE & COMPONENTS

- **Ballard Power** (Burnaby) — fuel cells.
- **Corvus Energy** (Richmond) — marine BESS.
- **Quantum Technology** (Squamish) — H₂ liquefier.

PRECEDENT + ACADEMIC

- **Kruger Kamloops** — \$30M SIF + \$25M CleanBC precedent for biomass-integrated mill conversion.
- **UVic IESVic** — feasibility + systems modelling.

Next steps

- Domtar APA negotiation and North Cowichan rezoning (RTE qualification).
- Halalt + Cowichan Tribes + Stz'uminus formal engagement and equity framework.
- BC Ferries + Seaspan e-fuel LOI package (volume-weighted demand schedule).
- UVic IESVic feasibility study on corridor strategy (Burrard + Crofton complementarity).

REFERENCES

1. PDEC Economic Model (pdec.ca/crofton) — Crofton tri-pathway + e-fuel sensitivity.
2. ECCC NIR — 2.68 kg CO₂/L diesel factor.
3. BC Hydro 2025 IRP; Rate 1830 transmission service (1L139/1L140 Crofton circuits).
4. Domtar Crofton mill closure announcement (Dec 15 2025).
5. Building Canada Act; Budget 2025; Clean Hydrogen / CCUS / Clean Tech ITCs; Bill C-15; ILGP non-grind-down expansion.
6. BC Hydrogen Strategy (2021); CleanBC LCFS; DRIPA.
7. Ekona Power — xCaliber methane pyrolysis; Gen 2 pilot (500 kg/day, Burnaby); 20 TPD FEED.
8. Haffner Energy — HYNOC A H6 biomass gasification with BECCS.
9. Puro.earth CORC methodology — biogenic CO₂ permanent removal via concrete.
10. Algers & Bataille (2025) — DRI model 54 kg H₂/t iron.
11. Kruger Kamloops — biomass-integrated pulp mill precedent.
12. Canadian Sustainable Jobs Act (2024); IDEaS defense H₂ program.
13. North Cowichan Revitalization Tax Exemption bylaw.
14. Treasury Board CBA Guide (3-8% social discount rate).



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Full Crofton economic model +
interactive Q&A



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