ENGAGEMENT PLAN · ENERGY TRANSITION CAPITAL ALLOCATION

# Tideway: *10-year capital plan* for an integrated utility under the energy-transition trilemma.

*A North American integrated utility (~$25B revenue, ~85 TWh/yr generation, ~6M customer accounts) is rebuilding a ~$40B 10-year capital stack against three constraints that don't co-optimize: a federal net-zero-electricity pathway, a politically-capped rate-payer bill, and an aging gas-peaker fleet that is both reliability-essential and a regulatory liability.*

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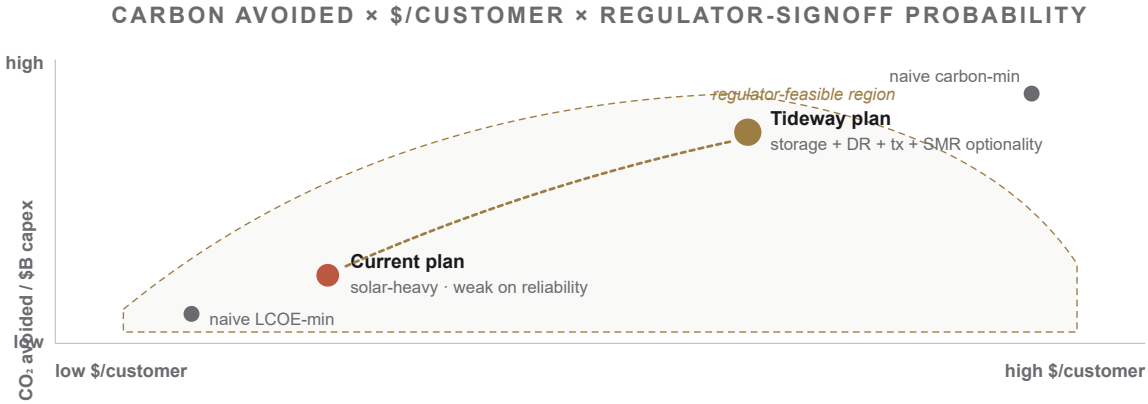
**Targets** McKinsey Sustainability · BCG Climate & Sustainability · Bain ESG · Accenture Sustainability

## The Problem

**The current 10-year plan optimizes one objective at a time and quietly fails on the other two.** The finalized 2024 CER (SOR/2024-263) pushed the net-zero electricity target from 2035 to 2050, meaningfully softer than the August 2023 draft, but $CO_2$ performance standards still bind every new gas-peaker MW commissioned after 2035. Rate-payer bills are politically capped at ~3–4%/yr; reliability reserve cannot drop below the regulator's threshold for a single hour.

The current plan over-indexes on utility-scale solar PV because Lazard's 2025 unsubsidized LCOE of **~$38–78/MWh** is the cheapest unit cost on the page. What it understates is the *system* LCOE: integration costs at high VRE share rival the generation LCOE itself, pushing effective marginal abatement cost to **~2–3× the headline**. That is a **frontier problem, not a unit-cost problem**; the canonical MAC curve needs a three-objective extension to land politically.

FIGURE 1 · THE THREE-OBJECTIVE FRONTIER




*Each candidate plan is a point in three-space: $MtCO_2$ avoided per $B capex, median rate-payer bill impact, and regulator-signoff probability (the dashed envelope). The current plan sits inside the envelope but well below the frontier; naive corner solutions fall outside it. Tideway re-optimizes onto the frontier and inside the envelope.*

## Sizing the prize

The 10-year capex envelope is **~$40B**; a **~10–15% re-shape** = **~$4–6B reallocated**. Context: S&P Global projects US IOU capex near **~$1.3T over 2026–2030**. A frontier-optimized plan, heavier on 4-hour BESS (Lazard 2025 LCOS **~$115–254/MWh**; ~$83/MWh with ITC), DR/VPP (NA fleet **~37.5 GW in 2025**), targeted transmission, and SMR optionality (OPG's **BWRX-300 at Darlington**, ~$7.7B first unit, in-service ~2030), projects **~+15–25 $MtCO_2$ avoided cumulative** at neutral-to-improved bill impact.

*Sizing: ECCC CER (SOR/2024-263); Lazard LCOE+ Jun 2025; S&P Global Apr 2026; OPG/WNN BWRX-300.*

10-YR CAPEX RE-SHAPED
**~$4–6B**
*10–15% of ~$40B envelope*

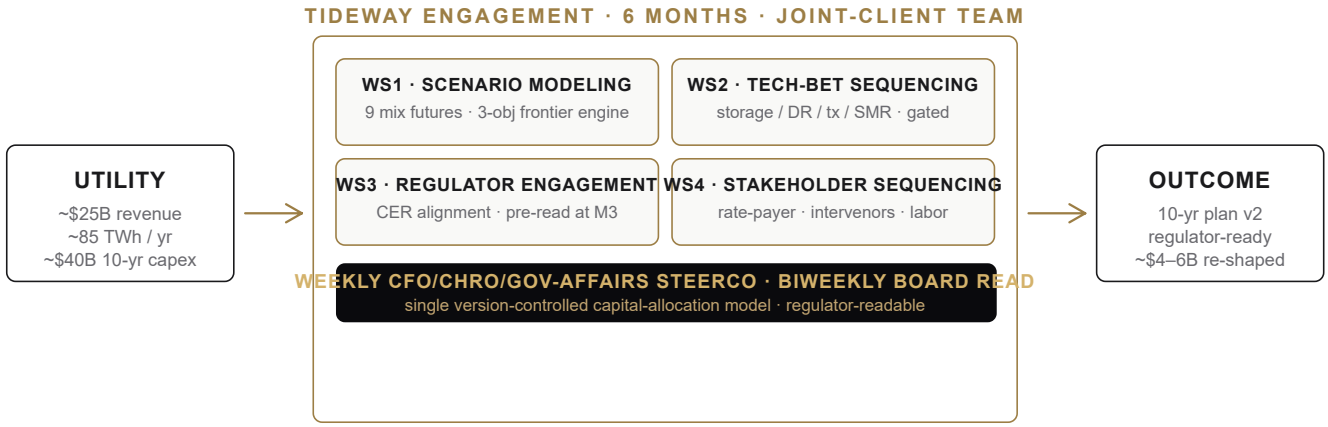
INCREMENTAL $MTCO_2$ AVOIDED
**~+15–25 Mt**
*Cumulative · 10-yr horizon*

THE UNLOCK

Replace the single-objective MAC curve with a **three-objective frontier model** ($MtCO_2$ avoided × $/customer × regulator-signoff probability) run across **nine generation-mix scenarios**, then sequence so each bet buys optionality on the next: **storage + demand-response first** (defers peaker retirements without breaking reliability), **transmission second** (unlocks cheap existing solar), **SMR optionality last** (gated on Darlington in-service ~2030). Regulator engagement runs in parallel from week 1, co-built against the provincial board's affordability and reliability tests.

## Engagement architecture

FIGURE 2 · FOUR-WORKSTREAM OPERATING MODEL




*Four workstreams in parallel from week 2; weekly steerco; biweekly board read. A single version-controlled capital-allocation model is the source of truth: auditable, regulator-readable, the only artifact the filing can be defended on.*

WORKED EXAMPLE · REPRESENTATIVE RE-SHAPE

Take **~$2.5B** earmarked for **~1.5 GW** of additional utility-scale solar PV. Re-allocate to **~800 MW of 4-hour BESS**, **~400 MW of contracted DR/VPP**, and a transmission upgrade unlocking **~600 MW of under-curtailed wind**. Frontier result: **~+0.6 $MtCO_2$/yr avoided**, **~–1.2% on median bill** vs. solar-heavy variant, **regulator-signoff probability +~15 pts**. Same capital, different frontier position.

## Sequenced delivery (six-month engagement)

| PHASE | WORKSTREAM CADENCE | FORCING-FUNCTION DELIVERABLE | DECISION GATE |
|---|---|---|---|
| **M0–2** Scenario modeling | WS1: 9-scenario model · 3-objective frontier engine · system-LCOE / MAC calibration | Frontier baseline · current-plan scoring · scenario shortlist (3 of 9) | Steerco approves shortlist; board reads frontier deck |
| **M2–4** Sequencing + pre-read | WS2: storage / DR / tx / SMR sequencing · WS3: provincial-board pre-read · WS4: stakeholder map | Sequenced tech-bet portfolio · regulator pre-read · stakeholder memo | Regulator informal signal · CFO approves re-shape envelope |
| **M4–6** Plan synthesis | 10-yr plan v2 drafting · IRP-filing alignment · capability transfer | Final 10-yr capital plan · regulator-readable filing draft · revalidation cadence | Board approves plan v2; client team owns the model |

## Metrics that matter

| LAYER | METRIC | 10-YR TARGET | WHY IT MATTERS |
|---|---|---|---|
| **North-star** | Cumulative $MtCO_2$ avoided per $B capex | > current-plan frontier by ~30–40% | The single number the engagement is judged on; subsumes LCOE and integration cost |
| Counter | Grid-reliability index (LOLE / EUE) | ≤ baseline LOLE · zero firm-load shed | One reliability event of the wrong magnitude voids the plan politically |
| Counter | Median rate-payer bill impact (% / yr) | ≤ provincial cap (~3–4%) | Above the cap, the regulator denies the IRP |
| Approval | Regulator-signoff probability | > 70% at filing · > 85% at hearing | Approval probability is forecastable; treating it as a metric is the point |
| Optionality | Pathway-flexibility (gated capex %) | > 40% behind a gate | 2026 decisions about 2032 costs *will* be wrong; optionality is the hedge |
| Compliance | CER conformance margin | ≥ 15% headroom by 2035 | Below 15%, a single delayed unit puts the fleet out of compliance |

## Risks & mitigations

HIGH **Regulatory uncertainty: federal CER softens further, or provincial commitments tighten faster than federal; the target moves under the plan.**

**Mitigation:** the plan is built on the *frontier*, not a single point; scenarios span federal-soft / provincial-tight and federal-tight / provincial-soft. WS3 regulator engagement is continuous; M3 pre-reads surface tightening signals before they become rules.

HIGH **Technology-cost trajectory error: BESS, SMR, or transmission costs deviate ~30%+ from base case.**

**Mitigation:** >40% of remaining capex sits behind decision gates with named triggers (Lazard LCOS print, Darlington unit-1 in-service, transmission queue). Annual revalidation: the plan is a living artifact, not a commitment to today's cost curves.

MED **Stakeholder backlash from rate-payers, transition-region communities, or labor; or reliability degradation under high-VRE penetration.**

**Mitigation:** WS4 orders changes by political feasibility: affordability first, retirements only after replacement capacity is in service. System-LCOE is the costing convention; peaker retirement is gated on demonstrated 4-hour BESS + DR performance through one peak season.

## 30 / 60 / 90, first-quarter sprint plan

30 DAYS

### Stand up the model

- 9-scenario generation-mix model framed
- 3-objective frontier engine v0 running
- System-LCOE costing convention adopted

60 DAYS

### Score · shortlist · pre-read

- Current plan scored on the frontier
- 3-scenario shortlist with steerco approval
- Provincial-board informal pre-read

90 DAYS

### Sequence the bets

- Tech-bet sequence with decision gates
- Stakeholder map & ordering memo
- Capital re-shape envelope CFO-approved

DECISION ASKED

Authorize a **six-month engagement** with a joint client team (partner + two senior associates + four analysts, plus embedded modeler), priced as a fixed envelope in the **~$4–7M range** against a ~$40B 10-yr plan. Success: plan v2 on the three-objective frontier · >70% regulator-signoff at filing · ≤ provincial affordability cap · reliability ≥ baseline · client team owns the model.