ILLUSTRATIVE SAMPLE

Quartz Shift

Fleet Transition Pathways Report

A strategic roadmap for Harbour City Services

Harbour City Services is a fictional organisation. The fleet data and results in this report are illustrative and have been prepared to demonstrate Quartz Shift's reporting approach. Some pages have been intentionally blurred.

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Who we are

Founded in 2020, Quanta Shift is a specialist advisory focused on helping organisations make confident, evidence-based decisions about fleet electrification. Our approach combines deep expertise in data analytics, cost modelling, and capability planning to deliver practical, defensible transition pathways.

Our experience spans complex fleet environments, including capability planning for emergency services and advisory work with asset-level fleet managers across government and industry.

We bring a strong foundation in market dynamics, alongside expertise in electric vehicles and their real-world performance.

We work closely with decision-makers, including executives and finance leaders, to translate technical analysis into clear insights, ensuring organisations understand the operational, financial, and strategic implications of transitioning their fleet.

Executive summary

Key takeaways

The assessment recommends Planned Transition as the reference pathway. Cost outcomes are effectively neutral, with 8-year Total Cost of Operations (TCO) 0.1% better than business as usual.

Peak electrification reaches 39.0% of the fleet. By the end of the horizon, annual operating costs are 9.6% lower.

Planned Transition is broadly cost neutral on 8-year TCO. Lower operating costs more than offset higher charging infrastructure and vehicle depreciation costs.

The recommended pathway achieves a partial fleet transition, peaking at 16 plug-in electric only battery electric vehicles (EVs) out of 41 fleet vehicles (39%).

Three utes face genuine operational blockers, specifically EV replacements cannot meet towing requirements. Market and technology development may unlock these over time.

EV uptake is front-weighted, with most adoption in the early years. The cost case becomes more supportive from 2027 onward.

Capital peaks in the first year of implementation, front-loading investment pressure; however operating savings emerge early, and running costs are lower by the end of the period.

Chart 1 - Cumulative TCO by year, by scenario

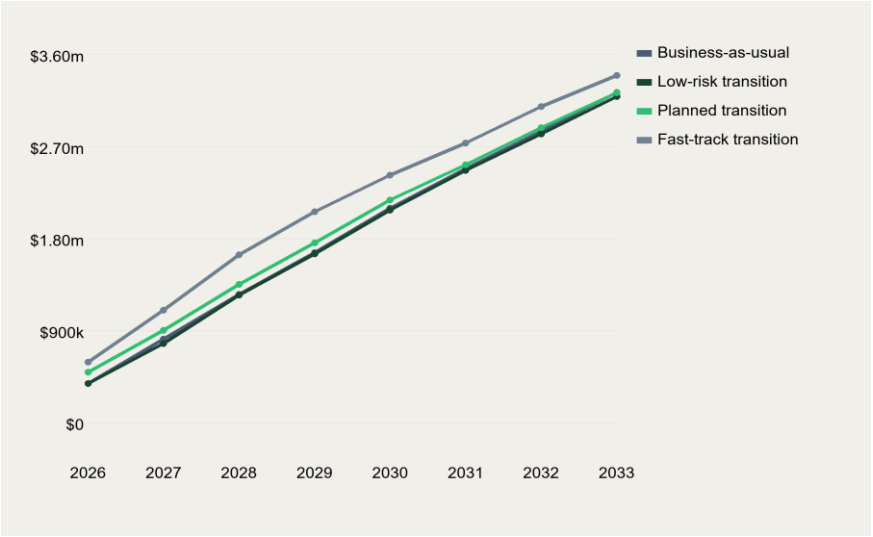


Chart 2 - Projected EV share by scenario

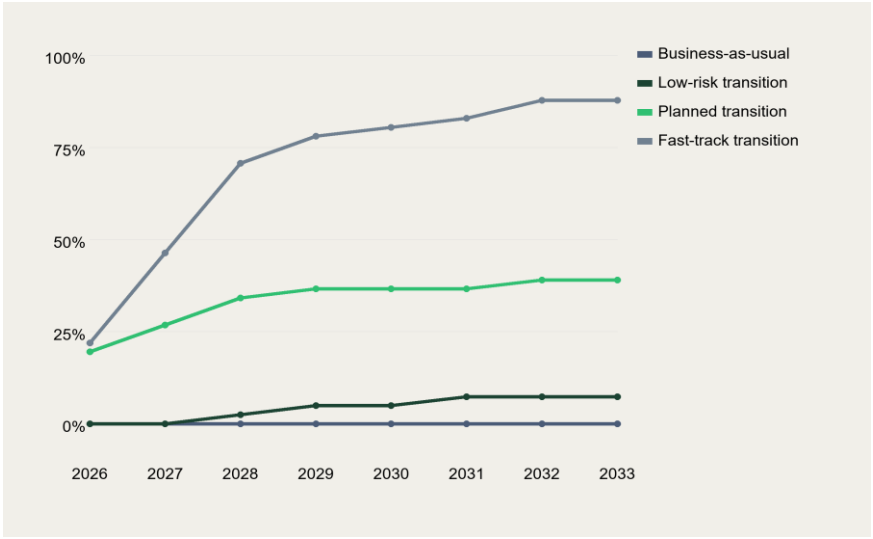


Table 1 - Recommended scenario execution profile

Metric	Value
Recommended scenario	Planned transition
Net present value (NPV) vs BAU	$8k lower
Lifetime TCO	$4k savings
Additional capital required	$58k
Tailpipe emissions reduction	403 tCO_2
Fleet electrified	39%
Transition risk	Moderate

Fleet snapshot

Your fleet

The fleet is weighted toward passenger vehicles and SUVs, which means the transition pathway should be governed by those duty cycles rather than a generic passenger-vehicle policy.

A material near-term replacement wave is visible, creating an opportunity to lock in EV-ready choices before ageing assets force reactive like-for-like renewals.

Examples in the client fleet include Toyota Corolla (Passenger), Hyundai i30 (Passenger), Ford Ranger (Ute), Toyota Rav4 (SUV) - grounding the transition pathway in the actual vehicles being operated rather than a generic vehicle profile.

Table 2 - Fleet snapshot

Vehicle class	Fleet count	Mean daily km	Mean towing	Mean payload	Mean CO_2	Fuel mix
Passenger vehicles	21	55	0 kg	0 kg	144 g/km	Petrol 16, Hybrid 5
SUVs	15	70	0 kg	230 kg	159 g/km	Petrol 7, Hybrid 6, Diesel 2
Utes	5	79	1,500 kg	0 kg	210 g/km	Diesel 5

EV readiness assessment

Lifecycle TCO parity is visible for [illegible] fleets. The crossover is driven by declining EV purchase cost and lower running cost over the life of the vehicle.

Under the recommended pathway, electrification is concentrated in [illegible] vehicles, [illegible] class. This cuts [illegible] EV-versus- [illegible], or most, equal to [illegible] of the corporate fleet.

Vehicles blocked from electrification could not be replaced from the current operating inputs.

Figure 1: [illegible] lifetime purchase price for EVs and the conventional vehicles

Table 1: [illegible] recommended pathway and segment

Segment	EV-ready	Charge by	Not yet ready	Ineligible/exempt	Total
Passenger vehicles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vans	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Fleet transition pathways

Methodology

How it works

We take a data-driven, capability-first approach to fleet electrification. Rather than recommending individual vehicle models, we assess each vehicle in your fleet based on how it is actually used – including daily distance, payload, towing, and operating conditions.

From this, we create an "EV twin" for every vehicle. This represents a pool of electric equivalent vehicles in the current market, matched on real-world capability rather than brand or vehicle type. Where a direct match is not yet viable, or there is a thin emerging market, we clearly identify the specific gaps.

Our analysis draws on a wide range of curated datasets, including vehicle specifications, market pricing, operating costs, government charges, and energy tariffs.

We then model the different scenarios. Each scenario is assessed on net present value, total cost of ownership, operational fit, and implementation risk.

The result is a clear, evidence-based pathway that helps you understand what can transition today, what comes next, and where to focus for maximum impact.

Scenario descriptions

Business as usual: Replace vehicles on the existing replacement pathway, with ICE replaced by ICE and existing EVs remaining EVs.

Low-risk transition: Only transition vehicles where there is an EV-ready alternative with acceptable operational risk and sufficient market depth, and only when the vehicle is naturally due for replacement.

Planned transition: Bring forward transition ambition slightly where there are efficiencies in charging infrastructure installations. Allow measured adoption of emerging vehicle classes where plausible within roughly a three-year horizon.

Fast-track transition: An increased risk appetite is adopted by this scenario, with "Emerging" and "Not-yet-viable" vehicle classes adopted within the modelling period.

Recommended scenario

Planned transition

Why Planned Transition?

Cost: Near-best financial outcome, without the capital and delivery stretch attached to Fast-track transition.

Emissions: Strong reduction, clearly ahead of Low-risk transition without relying on Fast-track transition's maximum acceleration.

Capability: Acceptable trade-offs, with replacements kept inside a practical operating envelope.

Risk: Manageable implementation profile, avoiding Fast-track transition's high governance load.

Charging: Deliverable rollout, with staged site validation before any acceleration decision.

Why it beat Low-risk transition: the lower-change plan is useful for risk control, but it leaves too much transition value and emissions progress behind to be the base case.

Why it beat Fast-track transition: the faster plan remains an acceleration option, but its added capital, charging and governance complexity do not justify making it the default.

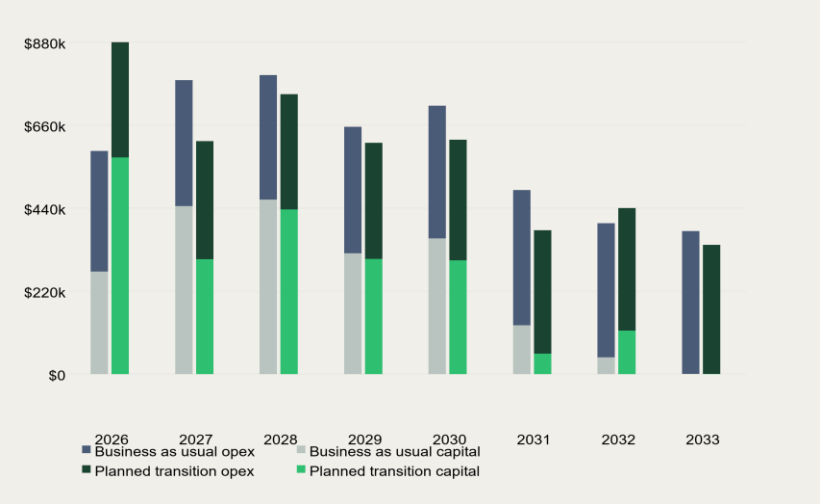
Table 4 - Recommended pathway outcome summary

Metric	Result
Fleet electrified	39.0%
Additional EVs	16
Tailpipe emissions reduction	403 tCO_2
High risk vehicles	0

Table 5 - Recommended EV replacements by segment

Vehicle segment	EV replacements
Passenger vehicles	7
SUVs	7
Utes	2

Chart 4 - Annual TCO, BAU vs recommended scenario



Scenario comparison

Financial impact

Over the assessment period, Planned Transition has a total cost of ownership of $3.23m compared with $3.23m under Business as Usual, a difference of $4k (0.1%). This broadly maintains total fleet cost.

The largest savings are from lower vehicle operating costs ($195k). The largest additional costs are charging infrastructure ($156k) and retained value ($156k).

Additional capital is highest in 2027, when the annual increment reaches $303k. Operating savings first appear in 2026, and annual operating costs are lower by $36k in 2033.

Across feasible transition pathways, total TCO ranges from $3.19m for Low-risk transition to $3.23m for Planned transition, a spread of 1.1%. Because the feasible scenarios are tightly clustered on cost, scenario selection should be guided by operational suitability, implementation risk and electrification objectives rather than marginal TCO differences alone.

Chart 5 - Annual TCO by year, by scenario

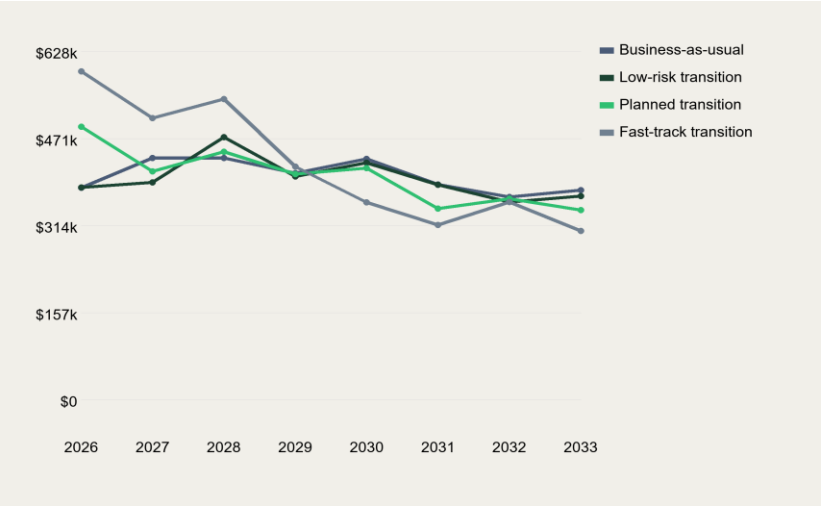


Chart 6 - 8-year cost composition by scenario

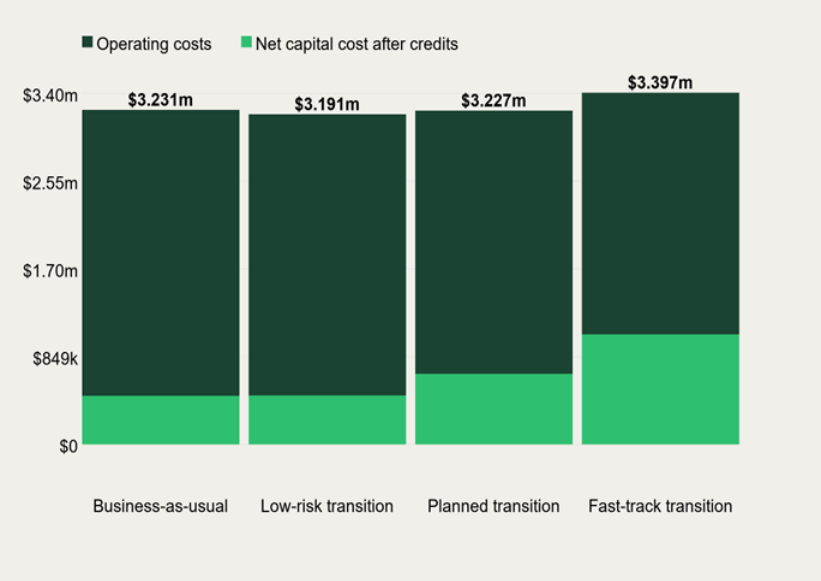


Table 6 - Cost profile scenario comparison

Scenario	NPV vs BAU	Lifetime TCO	Capex	Run-rate annual opex saving	Tailpipe emissions reduction (tCO_2)	Recommendation status
Business as usual	$0	$0	$0	$0	0	Baseline
Low-risk transition	$48k higher	$40k savings	$7k savings	$11k	60	Alternative
Planned transition	$8k lower	$4k savings	$58k additional	$36k	403	Recommended
Fast-track transition	$220k lower	$166k additional	$456k additional	$74k	783	Alternative

Table 7 - Annual cost profile scenario comparison detail

Scenario	EV replacements	High risk vehicles	Risk rating
Business as usual	0 (0.0%)	0	Baseline
Low-risk transition	3 (7.3%)	0	Low
Planned transition	16 (39.0%)	0	Moderate
Fast-track transition	36 (87.8%)	9	High

Capability

Fleet capability remains broadly comparable under the recommended fleet composition. Payload capacity, seating capacity, vehicle size and vehicle power are broadly maintained. Towing capacity is the primary capability trade-off and may require targeted exceptions for specialised works.

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Capex

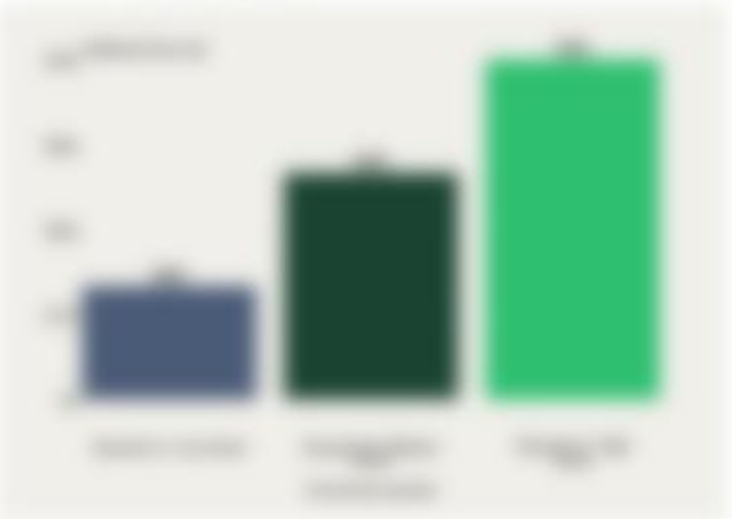
Opex

Fuel shock exposure

The sensitivity test covers three temporary liquid fuel price shock cases (10%, medium: 20%, high: 30%). Shocks apply to petrol, unleaded fuel costs, not battery electric electricity costs.

Business as usual leaves the fleet exposed to liquid fuel price volatility, consuming approximately 46,000 litres of petrol and diesel across the assessment period. Under these shock cases, additional fuel expenditure ranges from $23K to $70K. Low $23k, medium $47k, high $70k.

The practical implication is budget resilience. Fuel shocks may not change replacement requirements, but they can materially increase operating cost volatility while vehicles remain dependent on liquid fuels. Electrification reduces this exposure over time by shifting a larger share of fleet activity away from petrol and diesel.



Operational risk

The Pharmaki pathway remains manageable, but delivery confidence depends on active governance through procurement, changing readiness, and referral level validations.

The risks below should be treated as implementation controls rather than reasons to challenge the pathway.

Table 1. Sample table title

Risk	Likelihood	Impact	Mitigation
Design delivery delay	High	Medium	Confirm site readiness and begin procurement before service model is complete
Public reception failure	Medium	Medium	Develop clear and honest messaging before opening the service
Limited GP referral uptake	Medium	Medium	Work with practices to understand concerns and make referral simple
Training not completed in time	Medium	High	Schedule training sessions before the service goes live and track attendance
Information not updated	Medium	Medium	Check and refresh information regularly and assign responsibility

Charging strategy

Infrastructure

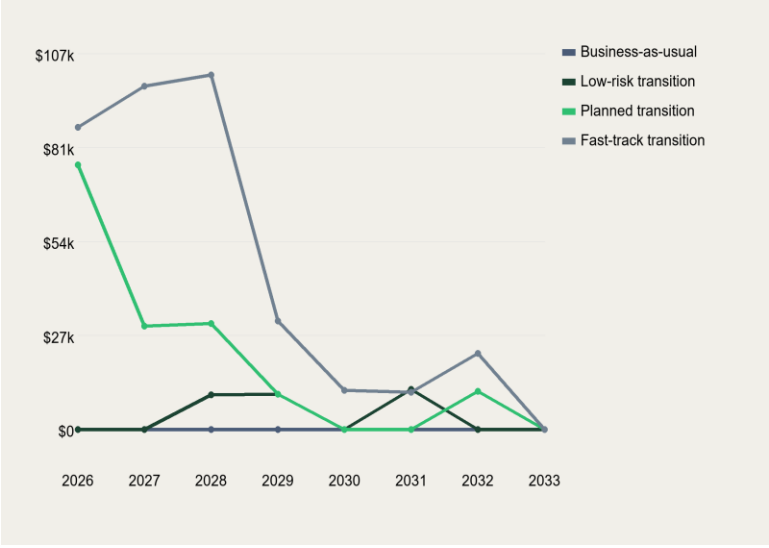
Charging infrastructure is a moderate cost item in the recommended rollout. The allowance is $156k, or about $10k per incremental EV across 16 vehicles and 3 touched sites. The practical effect is that infrastructure is not the main cost barrier here, although site delivery still needs active management.

Infrastructure scope is concentrated in standard depot charging rather than an extensive fast-charging build. The plan provides 16 AC charging positions and 0 incremental fast chargers. This keeps infrastructure complexity manageable unless operating patterns force more rapid-turnaround charging than the analysis currently assumes.

Charging spend is front-loaded into a specific delivery window rather than spread evenly. Within the recommended pathway, charging capital peaks in 2026 at $76k.

In practical terms, that is the year when procurement, site works and project management pressure will be highest.

Chart 13 - Charging infrastructure costs



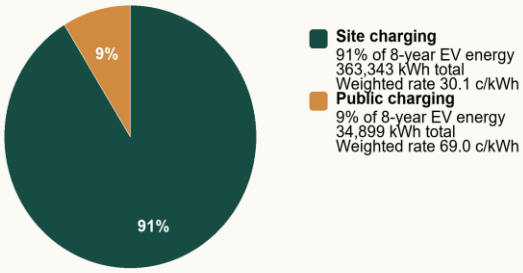
Charging mix

The charging plan is weighted toward lower-cost private energy. For Planned transition, the projected mix is 91% site, 9% public and 0% home charging, which points toward depot charging where vehicles are projected to return and dwell long enough to recharge. This means charging behaviour will materially influence operating cost resilience.

Charging-cost sensitivity is concentrated in tariff mix. The weighted public energy rate is about 69.0 c/kWh versus 30.1 c/kWh at site.

For decision-making, public-charging reliance is the fastest way for economics to deteriorate if operating assumptions prove too optimistic.

Chart 14 - Charging mix by source of energy



CO_2 tailpipe emissions reduction

Emissions reduction is significant. Over the horizon, tailpipe CO_2 falls by 403 tCO_2, or 33.8% versus business as usual. The implication is that the pathway can materially support ESG reporting and compliance discussions, provided execution stays on plan.

The pathway offers a cost saving of around $11 per tonne of tailpipe CO_2 avoided.

Chart 15 - Total CO_2 emissions avoided by scenario

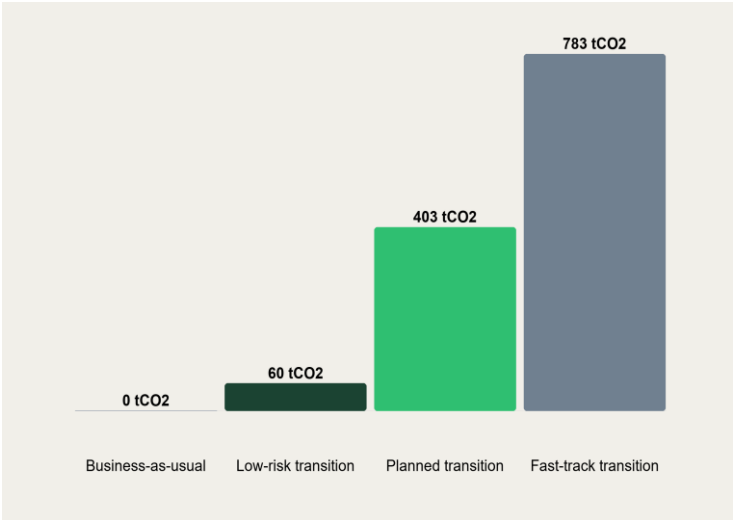
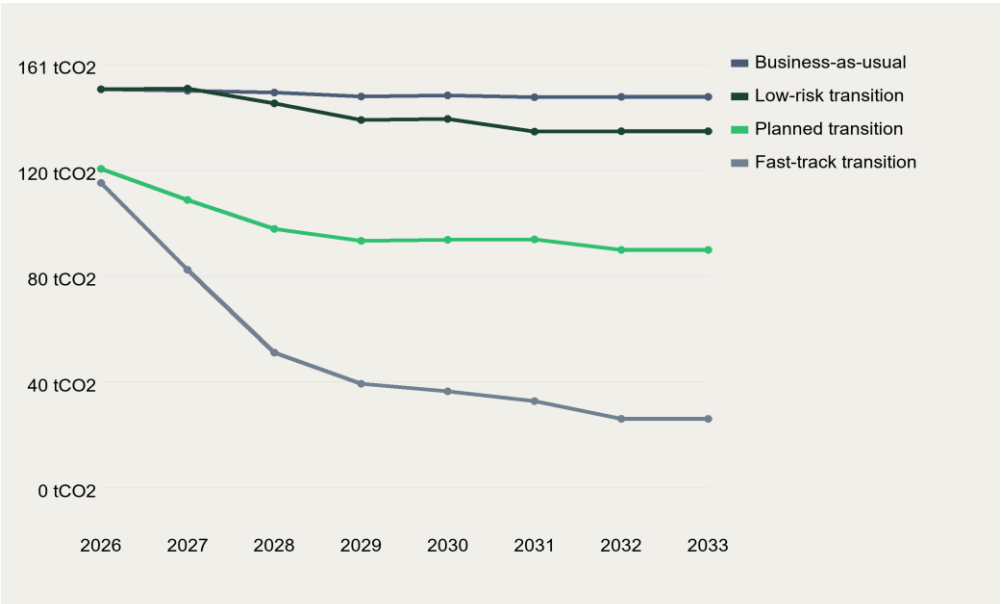


Chart 16 - Annual CO_2 emissions by scenario



Conclusion

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