2025 consultation

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Net Zero Commission
nsw.gov.au

Subject: Submission to the Net Zero Commission Consultation Paper (April 2025)

To whom it may concern,

Optimise Energy Solutions (OES) welcomes the opportunity to contribute to the Net Zero Commission's consultation. As a NSW-based company and one of Australia's only specialist Lighting as a Service (LaaS) providers, we advocate for the formal integration of LaaS into NSW's net zero strategy.

LaaS is a proven, no-upfront-cost delivery model that reduces emissions, improves public asset performance, creates skilled local jobs, and drives measurable public sector savings. International experience from Redaptive (US), Future Energy Solutions (US/EU), E-Energy (UK), and UrbanVolt (EU) demonstrates the scale, replicability, and economic returns of LaaS when applied across public infrastructure.

As a performance-based, data-rich solution, LaaS can be rapidly deployed across NSW hospitals, schools, councils, and administrative buildings, many of which are currently locked into outdated, inefficient lighting infrastructure that contributes to high energy bills and emissions profiles.

We are calling for the Commission to recognise LaaS as a strategic lever for accelerated decarbonisation and energy cost reduction in NSW's built environment.

Yours sincerely,

Dominic Harris
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Executive Summary

- ✓ Lighting as a Service (LaaS) is a proven retrofit and service model that delivers immediate emissions reductions and operating cost savings without capital expenditure.

- ✓ Optimise Energy Solutions is Australia's foremost active LaaS provider and is headquartered in NSW.

- ✓ OES has identified **over 300 GWh per year** of lighting energy savings across NSW's public sector assets, equating to **~230,000 tonnes CO_2-e avoided annually** and **$70 million+ in recurring cost reductions**. *(See Appendix A – Qualified Savings Analysis)*

- ✓ OES partners with NSW-based manufacturers (Lightculture, Austube, Novon, Enlighten, and Harcroft Lighting), supporting jobs across Somersby, Bankstown, Arndell Park, Artarmon and Seven Hills. A fully supported LaaS program could inject an additional **$51.5 million annually** into the state's manufacturing and supply chain sector. *(See Appendix B - NSW Supply Chain, Jobs & Investment Readiness)*

- ✓ LaaS has been successfully deployed across the US and Europe in both public and private sectors. *(See Appendix C – International LaaS Precedents: Market Validation)*

- ✓ LaaS should be recognised as an infrastructure investment class, included in Treasury strategy, and supported through procurement, reporting, and emissions accounting mechanisms.

Targeted Responses to Consultation Questions

Q5. Additional evidence to track progress toward net zero

Current emissions tracking frameworks are often limited by lagging data and limited granularity, particularly for the built environment. By incorporating verified savings from LaaS contracts and other service-based energy performance models, NSW can improve precision and transparency.

Globally, companies like Redaptive and UrbanVolt provide real-time monitoring and third-party verified reports to regulators and investors. OES follow similar protocols and can contribute granular performance data at the building level, including:

- ✓ kWh and tCO_2-e reductions per site and asset class
- ✓ Operational savings delivered to each public or commercial partner
- ✓ Fluorescent and non-recyclable lighting waste removed

The Commission should work with NSW Treasury and Infrastructure NSW to develop standardised performance reporting for all public assets undertaking energy upgrades.

Q14. Accelerating industrial electrification

Many industrial users in NSW face capital and operational barriers to electrification. While process heat is often seen as the priority, lighting remains a low-risk, high-impact first step. In logistics, warehousing and light manufacturing, lighting can represent 20–40% of electricity use.

Through LaaS, these loads can be reduced by 60–70%, which not only delivers emissions savings, but also enables:

- ✓ Reduction of peak demand
- ✓ Load balancing and flexibility
- ✓ Future readiness for electrified process loads

Future Energy Solutions in the US has demonstrated widespread adoption of LaaS in logistics and distribution facilities, delivering typical project paybacks under 3 years. In NSW, LaaS can be scaled quickly in industrial zones by:

- ✓ Including LaaS in Net Zero Industry & Innovation grant programs
- ✓ Facilitating precinct-scale tenders for LaaS implementation
- ✓ Fast-tracking approvals for aggregated LaaS upgrades

Q15. Waste and circular economy priorities

Lighting is often overlooked in circular economy strategies, despite the significant waste burden of mercury-containing fluorescent lamps and poorly recyclable legacy fittings. LaaS provides a bundled solution that includes:

- ✓ Removal and compliant disposal of hazardous luminaires
- ✓ Recovery and recycling of lighting components (glass, metals, plastics)
- ✓ Preference for modular and upgradable systems from local manufacturers

OES has diverted thousands of mercury lamps from landfill, and our local partners integrate circular principles into product design.

NSW can further support this by awarding LaaS providers with verified recovery protocols under circular economy incentive schemes and requiring lighting waste diversion data from all public asset upgrades.

Q19. Electrification and energy efficiency in public buildings

LaaS offers an immediate, zero-capex pathway for public buildings to upgrade outdated lighting and reduce energy use. In NSW, this can be applied across a wide range of sites, including:

- ✓ Schools, TAFES and Universities
- ✓ Local Council Buildings
- ✓ Public Housing and Health Precincts
- ✓ Emergency Services Infrastructure

OES proposes:

1. A government-endorsed LaaS procurement panel to accelerate uptake
2. Inclusion of LaaS in all SEPP upgrades and under the Energy Savings Scheme
3. LaaS readiness assessments in all building leasing, planning and asset renewal programs

With over 300 GWh/year in potential savings, this would reduce emissions, lower maintenance costs, and improve occupant safety and comfort.

Q20. Addressing social equity in electrification

Public housing, regional health clinics, and underfunded schools often lack access to capital for upgrades. LaaS allows these facilities to modernise without upfront cost and redirect savings to core services.

OES is committed to partnering with Indigenous-owned and regional contractors, offering internships and training for audit and delivery roles, and supporting local asset managers to understand energy opportunities.

By launching a **"Community LaaS"** initiative, NSW can prioritise retrofits in disadvantaged areas and transparently track equity outcomes.

Q22. Monitoring Framework

A well-structured monitoring framework should include:

- Emissions reductions per site and per square metre
- Total energy saved (MWh) by sector
- % of public assets covered under LaaS or EPC contracts
- Lighting waste avoided (kg or tonnes)
- Jobs created via retrofit programs.

These metrics are already tracked within OES reporting dashboards and align with approaches used by government partners in the UK and US. NSW could adopt a similar model and require performance-linked disclosures for state-funded upgrades.

Q26. Tools to support decision-makers

OES recommends the creation of a central LaaS investment framework within Infrastructure NSW or the Energy Security Corporation to simplify access and enable bundling of public sector assets.

Decision-makers need tools that allow them to:

- Evaluate asset portfolios for LaaS readiness
- Access pre-approved supplier panels and procurement templates
- Monitor outcomes through interactive dashboards
- Assess the investment case for LaaS using Treasury-aligned ROI and emissions tools

Appendix A: Qualified Savings Analysis

The estimated 300 GWh/year of energy savings, 230,000 tonnes CO_2-e avoided, and $70M+ in recurring operational savings are based on the following assumptions:

1. **NSW Public Sector Building Stock**
   - Approx. 90–100 million m^2 of total floor area
   - Conservative estimate: 25–30% of this area is addressable for LaaS retrofits
   - Addressable floor area used for modelling: ~30 million m^2
2. **Lighting Energy Intensity**
   - Pre-upgrade baseline: 10 kWh/m^2/year (NABERS/BCA aligned)
   - Total lighting load: 30 million m^2 × 10 kWh/m^2 = **300 GWh/year**
3. **Emissions Factor**
   - NSW grid: 0.77 tCO_2-e/MWh (National Greenhouse Accounts factor)
   - Total emissions avoided: 300,000 MWh × 0.77 = **231,000 tCO_2-e/year**
4. **Electricity Tariff Applied**
   - Blended public sector rate: $0.24/kWh (conservative average)
   - Total bill savings: 300 GWh × $0.24 = **$72M/year**

All figures have been conservatively rounded and benchmarked against LaaS deployments in the US (Redaptive, FES) and EU (UrbanVolt, E-Energy). Our modelling should be considered conservative, with further upside likely in asset-rich sectors.

The following summary table presents projected savings from recent energy audits conducted by OES across three major NSW property portfolios:

Property Portfolio	Annual Energy Savings (GWh)	Annual CO_2 Savings (tCO_2-e)	10-Year Financial Savings (AUD)
NSW Health	50.0	42,000	$85 million
NSW State Emergency Services	47.6	38,609	$98 million
City of Sydney Buildings	3.45	2,798	$10.5 million

This table highlights the broader systemic value of scaling LaaS across high-demand, high-cost public infrastructure portfolios in NSW.

This reinforces the scale of opportunity across frontline public infrastructure when LaaS is applied systematically.

Appendix B – NSW Supply Chain, Jobs & Investment Readiness

A Lighting as a Service rollout across NSW public infrastructure is forecast to require installation of approximately 250,000 lighting fixtures per annum over a 3–5 year delivery period. This demand would inject an estimated **$51.5 million per year** into the domestic lighting manufacturing and supply chain sector, significantly boosting economic activity in Greater Sydney and regional NSW.

Optimise Energy Solutions has established partner relationships with NSW-based lighting manufacturers, including:

- Lightculture (Somersby)
- Austube (Bankstown)
- Novon (Arndell Park)
- Enlighten (Artarmon)
- Harcroft Lighting (Seven Hills)

These companies contribute to a resilient local supply chain, support over 300 jobs, and offer direct economic benefit to Western Sydney, the Central Coast, and Greater Sydney.
Each LaaS rollout includes:

- Site audits (conducted by trained auditors and supported by internships)
- Lighting upgrades and commissioning
- Maintenance and performance reporting for up to 10 years.

To support and sustain NSW manufacturing and jobs, we propose the following measures:

- Preferencing NSW content in public LaaS contracts
- Linking Treasury infrastructure investment with verified performance-based projects
- Recognising LaaS as a scalable, low-cost, job-generating climate solution

Appendix C – International LaaS Precedents: Market Validation

Lighting as a Service is a globally proven model that delivers emissions reductions, asset performance and financial value. Several companies have pioneered this model internationally:

1. Redaptive (United States) - www.redaptive.com

Founded: 2013 - **Market**: US & Canada

Headquarters: San Francisco, CA

Model: Efficiency-as-a-Service (EaaS), specialising in large-scale, portfolio-based retrofits for Fortune 500 companies

Key Clients: McKesson, Aramark, AT&T, Iron Mountain

Scale: Over 200 million square feet of commercial space upgraded - More than 1,500 retrofit projects delivered - Backed by Linse Capital and CarVal Investors with over $200 million raised.

2. Future Energy Solutions (US/Europe) - www.feslighting.com

Founded: 2010 - **Market**: North America, UK & Ireland

Headquarters: Florida, USA

Model: Lighting-as-a-Service for national retail, hospitality and fuel networks

Key Clients: BP, Chevron, Starbucks, Hilton

Scale: More than 1,000 corporate client sites - Estimated $1 billion in cumulative energy savings delivered - Focused on guaranteed lighting performance and national portfolio delivery

3. E-Energy (United Kingdom) - www.eenergy.com

Founded: 2012 - **Market**: UK public sector

Headquarters: London, UK

Model: LaaS combined with energy monitoring, procurement and education platform

Key Clients: 500+ UK schools, local government and healthcare sites

Scale: Listed on the London Stock Exchange (AIM) - Revenues >£30 million (FY 2023) - Delivered upgrades for more than 500 schools without upfront cost.

4. UrbanVolt (Ireland/Europe) - www.urbanvolt.com

Founded: 2015 - **Market**: Ireland, UK, Europe, US (expansion)

Headquarters: Dublin, Ireland

Model: LaaS with an emphasis on SME electrification and carbon reporting

Key Clients: Irish SME sector, industrial and commercial properties

Scale: Over 200 GWh in lifetime energy savings - Winner of multiple European sustainability innovation awards - Partnerships with ESCOs and carbon finance providers

These companies demonstrate the viability and scalability of LaaS models across both private and public sectors. OES proposes adapting these proven approaches for NSW's unique energy, asset and workforce landscape.