

DCP Sustainability Amendments

Introducing Requirements
for All Electric Building



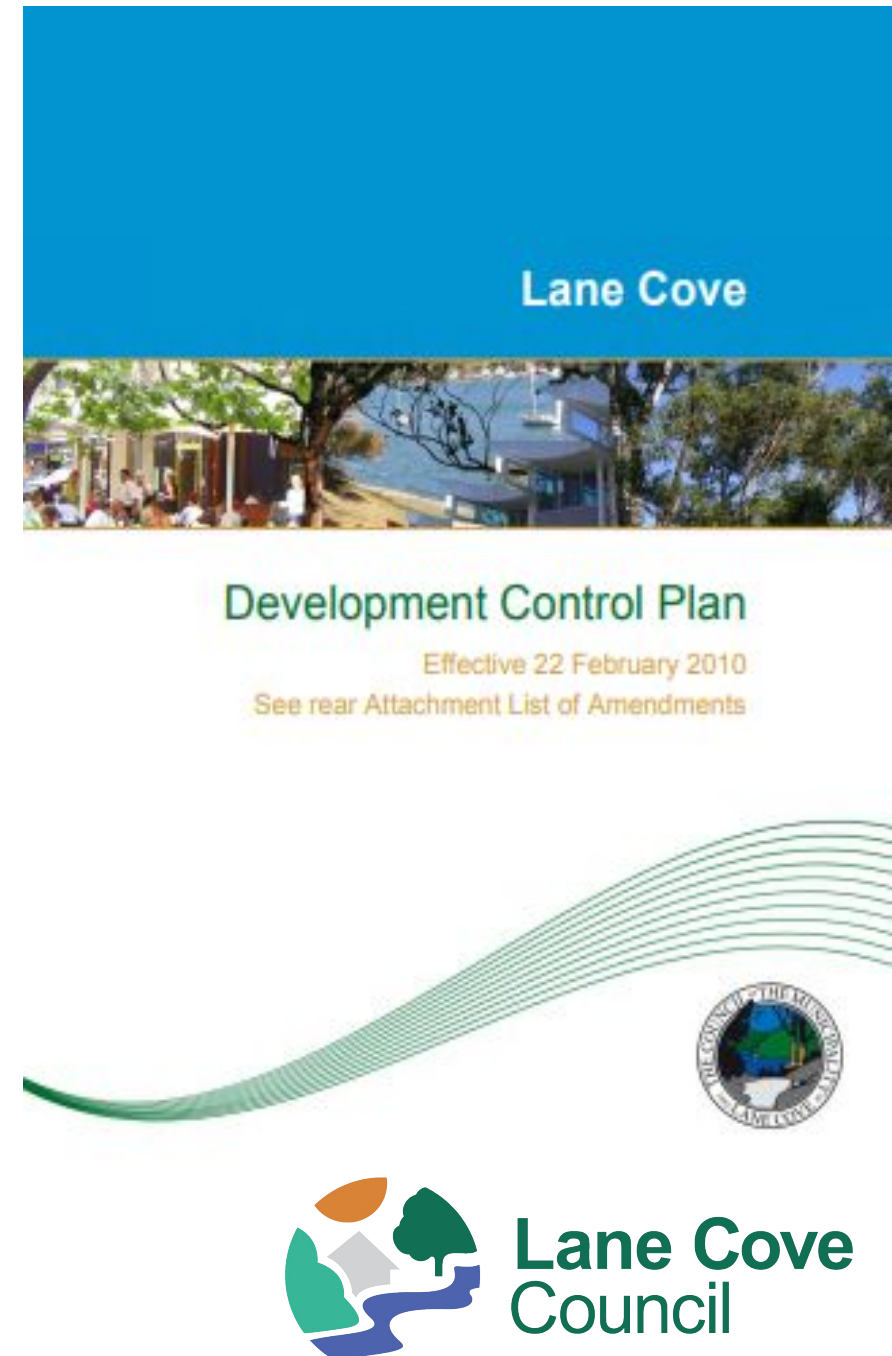
Lane Cove
Council

Background

The intent of the DCP Review was to guide development in meeting our sustainability objectives and align with best practice.

Our Sustainability Targets:

- 80% reduction in emissions by 2036
- No net increase in water use by 2036
- 80% diversion rate for domestic waste by 2036
- Enhance tree canopy, bushland and waterways
- Adapt to a changing climate



The Review Process

- Engagement of external consultancy to assist with expert review and modelling
- Review by technical staff
- Seek community input (workshops, website, and advisory committees)
- Workshops with Councillors
- Exhibition (further opportunity for feedback)
- Workshop with Design Review Panel
- Final Draft to Council for Endorsement



New Sustainability Inclusions

- Requirements for EV charging Infrastructure
- Requirements for on-site solar
- Consideration for refrigerants with a global warming potential of less than 10
- Improved natural ventilation to improve indoor air quality and reduce reliance on mechanical cooling
- Considerations for urban heat
- Requirements to minimise light spill into bushland
- Consideration for storage and collection of food organics
- Requirement for All Electric Buildings



Part S: Environmental Sustainability

- New Sustainability Provisions are integrated throughout the DCP where appropriate, and a new chapter Part S, created for key sustainability controls, covering;
 - Achieving Net Zero
 - Resilience And Health
 - Integrated Urban Water Management

Applicability

- Sustainability requirements apply to “a proposed cost of works more than \$250,000” (the lower limit of “major works”).

S.2.1 All Electric Buildings

Objectives

- A. To minimise the installation of plant and equipment in new buildings that rely upon on-site fuel combustion.
- B. To reduce indoor and outdoor air pollutants associated with the combustion of gas or wood and improve air quality.
- C. To reduce the cost to occupants by avoiding ongoing gas connection standing charges.
- D. To reduce the contribution of gas combustion to the anthropogenic heat contribution flux in the urban area.

Provisions

- A. All new developments are to use only electricity for all energy requirements associated with normal operations. Where outdoor barbeques require gas then only bottled gas may be used.
- B. Where it is demonstrated that the intended use of the building requires a process or equipment that is not able to be served by electricity, fossil fuels may be provided to serve that service only. Evidence shall be provided with the application of market testing and equipment supplier advice to confirm that an electrically powered alternative is not technically possible.

DA submission requirements

- A statement of compliance is required at the DA stage, which is to confirm that no natural gas service is provided and that the application is designed as an all-electric building.
- BASIX certificates and Section J reports should be reviewed to confirm that no gas is proposed to achieve compliance.

Justification

Avoiding fuel combustion in new buildings will provide immediate health benefits, reduce operating costs and prevent future expenses and disruption required to replace fossil fuel services with all-electric servicing

Benefits of All Electric Developments

Development Type	First Cost	Net Zero Benefits	Ongoing Cost Benefits	Co-Benefits
House	Saving	High	High	High
Apartments	Nil	High	High	High
Commercial	Low	High	High	Medium

Health Benefits

Gas appliances are a significant source of indoor air pollutants.

Gas combustion releases a variety of contaminants, including nitrogen oxides (NO_x), carbon monoxide (CO), formaldehyde (CH₂O or HCHO), and PM_{2.5} particles. These pollutants pose a significant health risk if not properly managed.

According to a study by the University of Queensland (2018), 12% of childhood asthma around the country can be related to gas cooking. The table below shows the measured emissions for gas stoves .

Measured NO ₂ Emissions from Gas Stoves	Peak (ppm)
Frying Bacon	0.104
Boiling Water	0.184
Gas Cooktop – no food	0.082 – 0.300

For comparison, the maximum contaminant limit for acceptable indoor air quality in the NCC 2019 BCA for NO₂ is 0.0897ppm.

Financial Benefits

Any development that provides all-electric servicing will save the cost associated with installing a gas service to the building, gas distribution pipework to each apartment and the cost of a gas meter and cupboard space for each apartment. These costs are in the order of \$2,000 per apartment.

Electric equipment is generally more energy-efficient than gasfired equipment, which can lead to lower utility bills and reduced energy consumption.

There is also a significant saving for the homeowner in avoiding standing meter charges associated with gas. The current Jemena standing charge for a gas connection is 65.8c/day, which equates to around \$240/year.

Removing a gas meter is also costly. The minimum scheduled cost for removing a gas meter is \$1,169.30.

If 1000 apartments were built in Lane Cove without a new gas connection, the avoided liability for disconnection would be over \$1m

Environmental Benefits

All-electric buildings can help combat the Urban Heat Island effect by reducing the amount of anthropogenic heat released.

Traditional gas hot water heating systems release waste heat into the atmosphere through flues for combustion exhaust gases, resulting in a significant energy loss. While commercial gas condensing boilers can reduce these losses to 15%, conventional boiler and balanced flue units can lose up to 30% of the consumed energy in heat, contributing to the energy imbalance that causes the Urban Heat Island effect.

On the other hand, heat pumps transfer heat from the atmosphere to water through an evaporation cycle, which cools the outdoor air while heating the water.

Questions and Comments



Lane Cove
Council