



Topic 4. Consideration of Emerging Technologies in Plan-making

The Longreach Regional Council Planning Scheme is intended to guide planning and development across a 10-20 year planning horizon. Technology can change greatly in that time. While a planning scheme can be amended, it needs to be both flexible and robust enough to deal with unanticipated development applications which may be lodged in the meantime.

This Major Amendment No. 2 represents an opportunity to consider emerging technologies and how they may impact planning and development in the Longreach Region. Where appropriate, high level supportive or deterrent statements may be included in the planning scheme, as well as pre-emptively incorporating some relevant parameters or assessment criteria. Through future amendments these could be later refined.

There may be limitations on the extent to which the planning scheme can regulate and/or facilitate development associated with emerging technologies. In some instances, future Commonwealth or State legislation may override or apply in addition to the planning scheme for these types of development. In the meantime, there is an opportunity now to make Council's position known.

Examples of emerging technologies which may be considered as part of Major Amendment No. 2 are:

- Solar farms
- Hydrogen developments
- Electric vehicle charging infrastructure
- Use of drones (remotely piloted aircraft).

Guidance and resources have been produced to assist local governments consider the land use planning implications associated with these emerging technologies. It is recommended that these documents be consulted directly for more information.

The following provides an overview of available resources and some of the key points relevant to land use planning for the Longreach Region.

Solar energy generation and solar farms

Global concerns regarding climate change and the setting of renewable energy targets are driving policies which promote solar energy generation.

Future developments may incorporate significant on-site solar energy generation infrastructure or be for large-scale commercial solar farms intended to supply to an electricity grid.

Presently in Queensland, a large-scale solar farm is typically a facility that generates over five megawatts of electricity, supplies an electricity grid and involves solar photovoltaic technology.

Large-scale solar farms typically occur in the rural zone and fall within the 'renewable energy facility' use definition in planning schemes. Related defined uses include 'substation', 'major electricity infrastructure' and 'minor electricity infrastructure'. Solar farm developments may also include caretaker's/workers' accommodation, workshop/storage facilities and fencing/security infrastructure. These aspects may also require assessment by council.

Identified planning considerations for solar farms include:

- locational requirements: cleared, flat/gently sloping, low natural hazard risk, proximity to electricity grid, competing agricultural land productivity characteristics, climatic conditions, proximity to towns, road network
- impact mitigation: glint and glare, visual amenity, safety and efficiency of road network, traffic impacts (construction and maintenance), construction noise, stormwater management
- facilities for, and safety of, ongoing maintenance staff and activities
- lifespan (likely in excess of 20yrs), decommissioning and land remediation

Connection to an electricity grid will be via local substation, transmission network (Powerlink) or distribution network (Energy Qld). Connection is also subject to approval from the Australian Energy Market Operator which occurs separately from any development approval process.

Energy storage facilities to store solar energy, such as electrochemical battery storages, are likely to become more prevalent as this technology advances. These may be in conjunction with a solar farm or as a stand-alone off-site installation.

Relevant reference resources:

- Solar Farm: Guidance for local government in plan making (2020), Queensland Government, available online at <https://dsdmipprd.blob.core.windows.net/general/solar-farm-guideline-part-1-local-government.pdf>

Hydrogen developments

Hydrogen activities may take many different forms, ranging from production and storage to transferring and use. Development use definitions in planning schemes are regulated in Queensland. There is no specific use for hydrogen activities. Hydrogen will form a part of different types of development.

Hydrogen can be produced from renewable water electrolysis, carbon capture storage or non-renewable sources. The National Hydrogen Strategy and Queensland Hydrogen Industry Strategy 2019-2024 support hydrogen from renewable sources.

Hydrogen can be used to store and moderate the supply of energy into an electricity grid or supplement the gas pipeline network, stored and used for off-grid power systems (such as to replace diesel generators) or to power fuel cell electric vehicles.

To the extent a hydrogen development constitutes an 'environmentally relevant activity' or 'hazardous chemical facility', the State sets out some planning parameters and will be involved in assessing the development application. This would typically be as a referral agency to council, who would lead the development assessment process.

Planning considerations for hydrogen development include:

- the extent to which council supports development involving hydrogen from each source
- the scale and type of hydrogen development to be attracted to the region and any thresholds for assessment
- the appropriate zones for locating various forms of hydrogen development (ie. industry zone, rural zone)
- risk mitigation: setbacks from sensitive uses such as houses, schools, childcare centres or health and community care facilities, minimum land area requirements depending on type of hydrogen development (renewable energy facility, service station, etc).

As hydrogen storage technology advances, it may become ancillary to a new or existing use. Whether such hydrogen additions constitute development (ie. a material change or use) able to be regulated by the planning scheme will need to be determined on a case by case basis. In some forms and scales they may not. For instance the installation of hydrogen cells at a house or business premises may be treated similar to the installation of solar panels on existing buildings.

Relevant reference resources:

- Hydrogen developments: Guidance for local government in plan drafting (July 2021), Queensland Government, available online at <https://dsdmipprd.blob.core.windows.net/general/guidance-for-local-government-plan-drafting-hydrogen-development.pdf>

Electric vehicle charging infrastructure

Queensland is a large state with geographically dispersed population centres. To support and encourage the uptake of electric vehicles, a reliable network of electric vehicle charging infrastructure is required to allow uninhibited long-distance travel.

Types of charging infrastructure vary from slow AC chargers installed in the home or workplace to ultra-fast 50kW+ DC chargers at public charging facilities designed to support inter-regional travel.

The town of Longreach is included in Phase 3 of the Queensland Electric Super Highway project. Phase 3 extends the electric super highway to link

with more regional and rural locations and deliver connectivity between Queensland and New South Wales. It involves the government-supported installation of a new fast-charging station, with exact locations yet to be determined.

State 'government-supported transport infrastructure' is usually outside of the scope of what a local government can regulate in its planning scheme. However, this project may provide the impetus for similar private commercial developments and in the future council may wish to consider installing its own charging infrastructure, both of which would require the planning scheme to be applied to determine the need for a development application and the relevant assessment criteria.

Locational considerations for development of dedicated public access charging facilities typically include:

- potential/design consumer demand
- power supply
- safety and accessibility (ie. proximity and connectivity to road network)
- scale and type of any proposed co-located facilities.

The Queensland Government practice note referenced below provides guidance on each of these and other requirements, for each type of charging infrastructure.

The planning scheme could set out Council's land use planning expectations for dedicated charging facilities (ie. similar in scale and function to a conventional service station), as well as expressing an expectation that certain types of new or expanded development (ie. service stations, car parks, shopping centres, community facilities such as libraries, sport and recreation facilities, tourist attractions, short-term accommodation and multiple dwellings) are 'electric vehicle ready' by either providing, or being designed to allow easy future installation of, electric vehicle charging infrastructure.

A planning scheme could also address:

- design standards for charging infrastructure
- signage requirements
- scale and type of any proposed co-located facilities
- differentiating the type of development application and assessment criteria for

conventional service stations compared with electric vehicle charging only service stations (different environmental and off-site impacts)

- requiring new or expanded conventional service stations to be designed with the ability to be efficiently repurposed in the future.

Relevant reference resources:

- Electric Vehicle (EV) Charging Infrastructure: Practice Note (March 2018), Queensland Government, available online at <https://apo.org.au/sites/default/files/resource-files/2018-05/apo-nid172781.pdf>
- Local Government Resource Pack (2020), Electric Vehicle Council, available online at <https://electricvehiclecouncil.com.au/wp-content/uploads/2020/12/EVC-Local-Government-Resource-Pack.pdf>

Drones (Remotely Piloted Aircraft)

The Queensland Government has released a Queensland Drones Strategy with a vision to becoming a world leader in drone technology and application. The Remote Area Planning And Development Board, of which Council is a member, recognises the potential drones and other technologies can have for the Central Western Queensland region to diversify and build sustainable businesses.

There is limited, if any, scope for a planning scheme to regulate the use of drones and remotely piloted aircraft. The Commonwealth's Civil Aviation Safety Authority (CASA) is responsible for the regulation of all commercial and recreational drone use within Australia.

Local governments in Queensland can, through local laws, regulate the use of council parks, roads and other land for launching, landing or operating drones and other similar propelled objects.

Council can however consider using the planning scheme to:

- compliment and reinforce its strategic objectives with respect to drone technology
- support and/or manage the associated land-based facilities to be used in

- connection with drones (ie. uses which fall within the 'air services' use definition or development which includes that use) manage the extent to which development and its impacts may encroach into certain areas of airspace, potential over a dedicated precinct that could support drone related development (ie. similar to the way the Airport Environs Overlay and code in the Longreach Regional Council Planning Scheme protect the airspace and operational requirements of the Longreach Airport).

Examples of land-based developments which may incorporate an 'air services' use or related drone activity may include drone sales and training facilities, dedicated launch and landing facilities, education and research facilities, food and goods deliveries from shops and warehouses to houses and business premises. Drones may also be used ancillary to industrial or agricultural uses, as well as emergency service and disaster management operations.

In Queensland, CASA has given conditional approval to a commercial entity to undertake a 1-year trial drone delivery services to houses in the Logan area. The findings of this trial, due to end 30 June 2022, may inform how local governments in Queensland seek to manage such activities. This remains a new and evolving area of technological advancement.

Relevant reference resources:

- How councils can use and manage drones (Remotely Piloted Aircraft), 2021, Queensland Government, available at <https://www.statedevelopment.qld.gov.au/about-us/local-government/for-councils/laws/how-councils-can-use-and-manage-drones-remotely-piloted-aircraft>
- Infrastructure planning needed now to deal with complexities of drones, Air Services Australia, <https://www.airservicesaustralia.com/infrastructure-planning-needed-now-to-deal-with-complexity-of-drones/>
- Tonkin, K., (2017) Urban Planning for Drones, <https://www.aviationprojects.com.au/news-view/urban-planning-for-drones-32>

Options for Amending the Planning Scheme

This Major Amendment No. 2 project, represents an opportunity to consider emerging technologies, their potential benefits for and impacts on the communities of the Longreach Region, and express strategic objectives and early expectations to guide potential development until a more definitive means of regulating such activities can be developed.

Have Your Say

There will be multiple opportunities to have your say during the process. The first of these will be in January 2022 when we release a public survey gathering feedback from our communities on all aspects of the current planning scheme. We will also be seeking to engage face to face with stakeholders on the unique issues covered in each amendment. We anticipate this process commencing in February 2022.

How Can I Keep Updated?

For more information about the proposed planning scheme amendments, or to register for email updates please visit longreach.qld.gov.au/townplan or contact us directly:

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