

Our Territory Gas Strategy

Natural gas as a low-carbon energy source has a critical role in the Territory's sustainable economic future and in global net zero emission transitions by 2050.

Pause

The Territory's world-class gas resources are poised to meet growing demand for cleaner, affordable transition fuel sources, both domestically and internationally. Natural gas is central to sustainable energy mix transitions that will deliver increased investment, innovation and multi-generational economic benefits as part of our journey to net zero emissions by 2050.

Explore gas-led growth projects across the Territory



Middle Arm Sustainable Development Precinct [↗](#)



The Beetaloo Sub-basin



Tennant Creek to Darwin Infrastructure Corridor



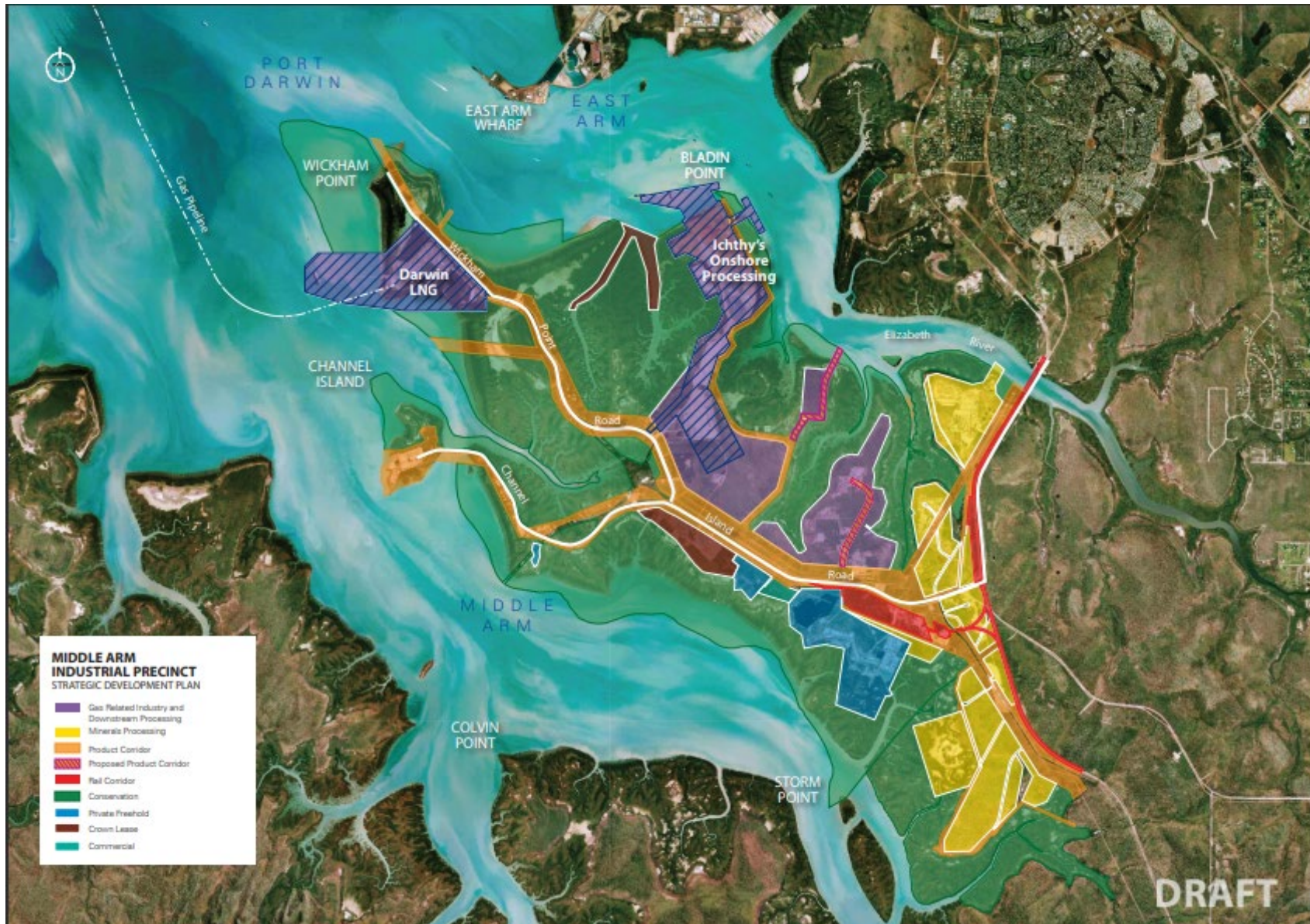
Middle Arm Sustainable Development Precinct (MASDP)

Middle Arm Industrial Precinct (MAIP)

Middle Arm Petrochemical Hub

It's a dangerous and volatile gas-led project!

MAIP – Proposed Industries



Proposed Industries

- Hydrogen production
- Ammonia
- Ethylene
- Urea
- Methanol
- LNG gas plant
- Carbon Capture and Storage (CCUS)
- Mineral processing

Covering a total of around 2,337 hectares (5,775 acres).

MAIP - Proximity of volatile industries to homes

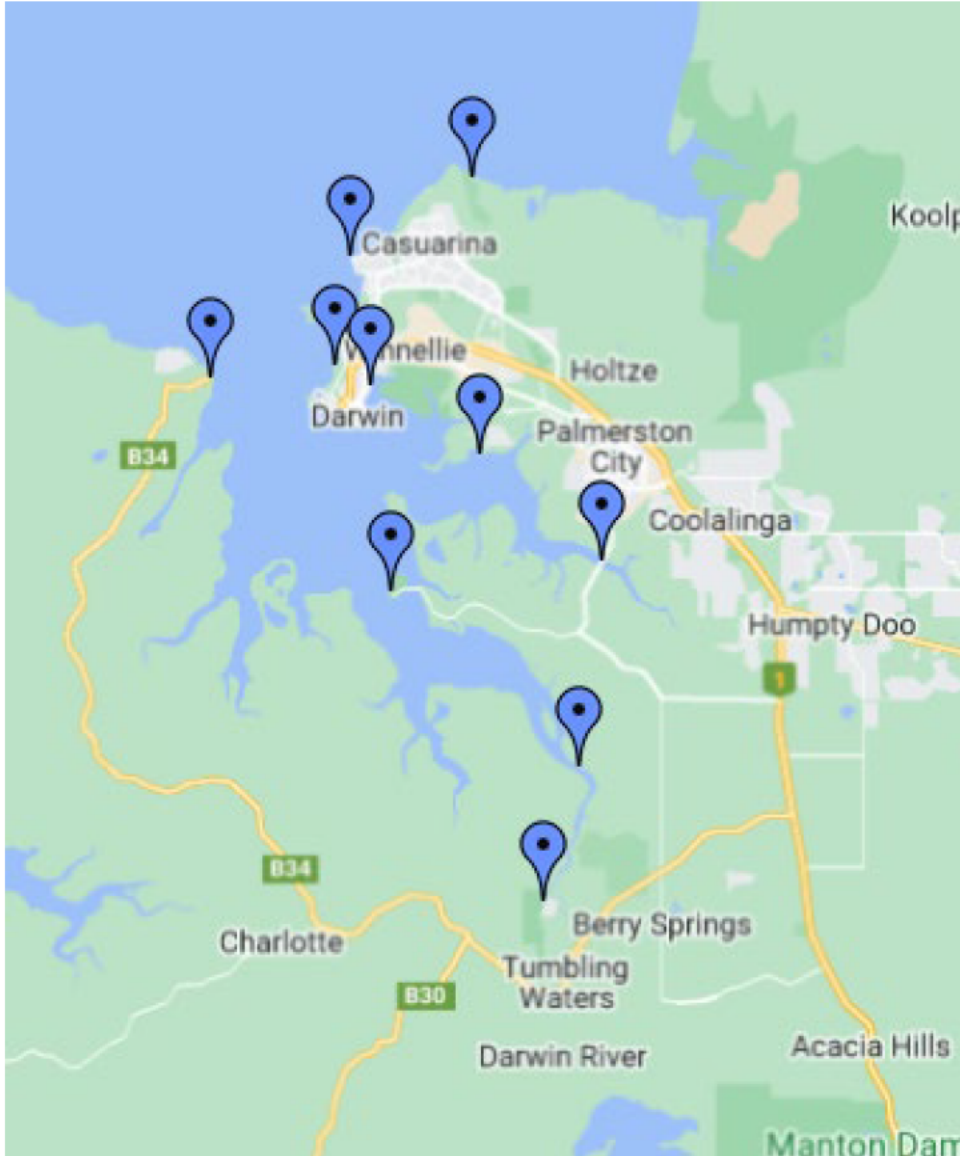


Approximate distance from homes

- 3kms from Palmerston homes
- 4kms from Darwin CBD
- 4kms from Virginia/Bees Creek homes
- 8kms from Coolalinga shopping centres
- 10kms from Noonamah homes
- 13kms from Southport homes

All these areas will likely be impacted by air pollution, health issues, increased water usage, mangrove destruction, Darwin Harbour contamination, and any accidents, spills or explosions caused by these volatile industries.

MAIP - The end of fishing in Darwin Harbour and Elizabeth River?



Boat Ramps near the proposed Middle Arm Industrial Precinct: Middle Arm, Channel Island, Palmerston, Hudson Creek, Southport, East Arm, Dinah Beach, and Mandorah Boat Ramps.

Fishing and boating has already been restricted in Darwin Harbour by gas facilities (Inpex and Darwin LNG). The new Middle Arm Industrial Precinct will further restrict fishing and boating access in the harbour.

The industrialisation of our Harbour will destroy mangroves, pollute the harbour and impact the health of our estuarine and marine species.



MAIP - HYDROGEN - H2



Shell global “Blue Hydrogen” facility <https://www.shell.com/business-customers/catalysts-technologies/licensed-technologies/refinery-technology/shell-blue-hydrogen-process.html>



Hydrogen explosion in Japan <https://theweek.com/asia-pacific/56774/five-dead-after-hydrogen-blast-rocks-chemical-plant-japan>

NT Government media releases cite “clean hydrogen” as being the fuel of the future and one of the reasons for this development. Their “clean hydrogen” is not “green hydrogen” which is renewable and made from water, but “blue hydrogen” which is made from methane gas. The greenhouse gas emissions footprint from ‘blue hydrogen’ is worse than natural gas. There is nothing ‘clean’ about this. CCUS is being used to create the illusion of hydrogen made from gas as being clean, but CCUS is not a proven technology.

One million dollars in federal funding has been awarded to the Darwin Clean Hydrogen Hub - a joint study between INPEX, Santos, Xodus and Australia’s national science agency CSIRO.

MAIP - AMMONIA - NH₃

It is proposed that ammonia will be produced from methane (gas) at Middle Arm. Ammonia production is highly explosive. Ammonia should never be produced or stored near residential areas due to its explosive quality. It also relies on the proposed CCUS facility to manage the carbon produced as a waste product. “The ammonia industry is a type of industry which classified as a major hazard which consists of chemical leaks, fires and explosions” (<https://www.hilarispublisher.com/open-access/chemical-risk-assessment-for-ureaammonia-production-plant.pdf>). Please watch the video of an ammonia plant explosion in West, Texas, which killed and injured residents living nearby <https://www.youtube.com/watch?v=1ReAjMhCeu0> .



Beirut <https://www.usatoday.com/in-depth/news/investigations/2023/04/10/10-years-after-texas-chemical-explosion-risk-another-runs-high/11434312002/>



Ammonia Plant Russia <https://www.tecnimont.it/en/what-we-do/fertilizers/kingisepp-ammonia-production-plant>

MAIP - Ethylene - C₂H₄

Ethylene is also made using methane gas. Ethylene plants are also called olefin plants.



Ethylene Cracker <https://www.sofisglobal.com/securing-safe-ethylene-production-use-valve-interlocks>



Louisiana olefin explosion <https://www.npr.org/sections/thetwo-way/2013/06/13/191314478/explosion-fire-reported-at-chemical-plant-near-baton-rouge>

“Ethylene production is an inherently complex and dangerous process, particularly when considering the operation of valves and/or line blinds around a cracking furnace. The incorrect operation of the controls to gas, feed stock and decoke air to the furnace can have catastrophic results...The probability of accident and injury can be high ...”

<https://www.sofisglobal.com/securing-safe-ethylene-production-use-valve-interlocks>



Common Name: ETHYLENE

CAS Number: 74-85-1
DOT Number: UN 1962 (compressed)
UN 1038 (refrigerated liquid)

RTK Substance number: 0873
Date: June 1996 Revision: August 2002

HAZARD SUMMARY

- Ethylene gas can affect you when breathed in.
- Skin contact with liquid Ethylene can cause frostbite.
- Exposure to Ethylene can cause headache, dizziness, fatigue, lightheadedness, confusion and unconsciousness.
- Ethylene is a HIGHLY FLAMMABLE and REACTIVE chemical and a DANGEROUS FIRE and EXPLOSION HAZARD.
- If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.
- **ODOR THRESHOLD = 270 ppm.**
- The range of accepted odor threshold values is quite broad. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

New Jersey Department of Health fact sheet
<https://nj.gov/health/eoh/rtkweb/documents/fs/0873.pdf>

MAIP - Urea - $\text{CH}_4\text{N}_2\text{O}$



Incitec Pivot's Gibson Island plant <https://www.abc.net.au/news/2021-12-20/australia-urea-local-production-adblue-shortage-crisis/100713728>



Terra Nitrogen Plant, UK <https://www.hilarispublisher.com/open-access/chemical-risk-assessment-for-ureaammonia-production-plant.pdf>

The plan is to make urea from liquid ammonia produced from methane gas. This process requires large volumes of water and energy and has many identified risks. The Risk Register “Safety Hazards in Urea Plants” lists 110 safety hazards associated with Urea production and warns that, “Even if one would implement all recommended prevention and mitigation measures, a significant number (64) of the safety hazards would still remain a high-risk factor”. <https://ureaknowhow.com/wp-content/uploads/2018/12/2018-12-Baboo-Major-Safety-Hazards-in-Urea-Plants.pdf>

MAIP - Methanol - CH₄O



Worlds First Methanol and Ammonia Co-production Plant, Russia 2019
<https://www.topsoe.com/blog/ucc-shchekinoazot-confirmed-guaranteed-operation-parameters-of-worlds-first-imap-methanol-and-ammonia-co-production-plant>



Chemours plant, West Virginia <https://www.aljazeera.com/news/2020/12/9/two-injured-due-to-explosion-at-west-virginias-chemical-plant>

Methanol is also planned to be produced from methane gas. It is extremely flammable and volatile and has an invisible flame. Methanol is harmful by ingestion, inhalation or through skin absorption and poses many environmental and health risks to humans, animals, bird, fish and plants. <https://www.dcceew.gov.au/environment/protection/npi/substances/fact-sheets/methanol>

MAIP - Liquefied Natural Gas (LNG)



Inpex LNG Plant <https://www.vertechgroup.com.au/projects/inpex-lng-plant-construction-support/>



WA government won't release gas explosion report <https://www.abc.net.au/news/2012-03-29/wa-government-drops-case-against-apache/3921248>

Liquefied natural gas (LNG) is typically 85-95% methane, with tiny amounts of ethane, propane, butane and nitrogen (the exact composition varies depending on its source and processing).

There are many concerns over the cumulative impacts and risks of adding a third gas plant to Darwin Harbour, including air pollution, water usage, risks of explosions, and further loss of amenity in the Harbour and surrounding suburbs.

MAIP - Carbon Capture and Storage (CCUS)



Chevron's Gorgon Project CCS, WA <https://www.chevron.com/what-we-do/energy/oil-and-natural-gas/assets/gorgon>



A carbon dioxide pipeline rupture in Mississippi sent at least 45 people to hospital in 2020 <https://www.eenews.net/articles/biden-releases-plan-to-avoid-dangerous-co2-pipeline-failures/>

Carbon Capture and Storage (CCUS) is used to create the illusion of chemicals and products made from methane gas as being clean, but CCUS is still being developed as a technology and has not been successful in other places where it has been attempted. For example, Chevron's Gorgon project on Barrow Island, WA, has "underperformed its targets for the first five years of operation by about 50%" (<https://ieefa.org/articles/if-chevron-exxon-and-shell-cant-get-gorgons-carbon-capture-and-storage-work-who-can>).

MAIP – Critical Minerals

Critical minerals will likely include lithium, phosphate, and possibly rare earth elements, copper, titanium and vanadium.

We have already witnessed Core Lithium washing sediments into Darwin Harbour from their Grants Lithium Mine. When this was filmed during an ABC's 4Corners interview with us and reported to the NT EPA, it was referred by the EPA to the Minister, who then retrospectively approved the discharge of wastewater to contaminate the creeks flowing into the Harbour.

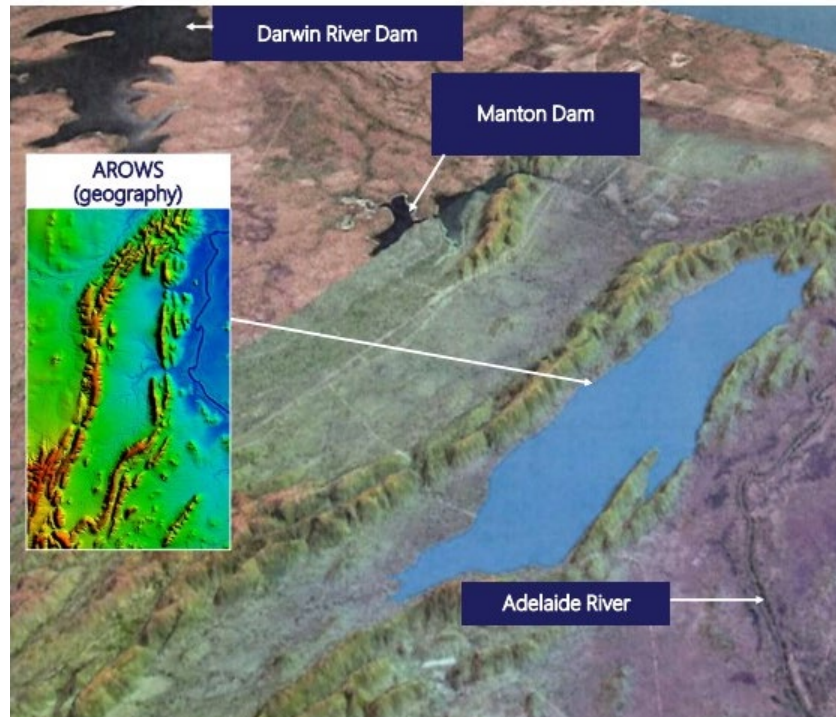
It is this lackadaisical attitude to environmental protection in the Northern Territory which concerns us most.



NT Indigenous leaders call for moratorium on new mines until government starts Redbank Mine rehabilitation <https://www.abc.net.au/news/2023-11-29/nt-indigenous-leaders-urge-redbank-mine-rehabilitation/103158550>

Additional developments required to support the MAIP/MASDP

The Middle Arm Industrial Precinct is not a stand-alone development. It will require harbour dredging to enable cargo ships to access the facilities. It will require road upgrades to enable heavy traffic to access it without endangering local road users. It will require methane gas which is not currently available or being produced, and may never be. It will require pipelines for gas, water, and other infrastructure which will need to be built – through peoples' rural and residential properties. And it will require more water than is currently available. All these works will require further taxpayer funding which would be better spent elsewhere.



Landholders along Darwin to Tennant Creek gas pipeline route angered by 'lack of communication' <https://www.ntnews.com.au/business/landholders-along-darwin-to-tennant-creek-gas-pipeline-route-angered-by-lack-of-communication/news-story/2229bb0201de2f9444fd40b7105f135c>

MAIP - Water

All the above industries require an incredible amount of water which is not currently available. Darwin's water supply comes from a mixture of Darwin River Dam and groundwater bores. Most of our groundwater sources are already overallocated, and Darwin River Dam (which loses 70% of its water to evaporation each year due to our dry season) already struggles to meet Darwin's demands if there are consecutive dry years. Inpex originally stated that they would build a desalination plant to create the water required for their LNG processing plant, but as seems to happen all too often in the NT, Inpex reneged and instead use Darwin's only town water supply, provided by 'Power and Water'.

To supply MAIP/MASDP with the water it will require, the NTG is proposing to return Manton Dam to service. This Manton Dam Return to Service plan is not widely known by the public, though we anticipate widespread community outcry if it ever occurs and public access is restricted, as Manton Dam is the only recreational waterbody near Darwin where people can waterski, kayak, fish, picnic and enjoy a day in relative safety on fresh water.

The NTG is also proposing to build the Adelaide River Off-stream Water Storage (AROWS) project to supply water obtained from floodplain harvesting. It is claimed that this shallow dam will not have the evaporative loss experienced by the deeper Darwin River Dam, and it will somehow miraculously provide water to not only MAIP/MASDP, but a swathe of new proposed suburbs, with a surplus left over for industrialised horticulture. AROWS will not only affect the floodplains and Adelaide River (which the floodplains flow into), but also potentially impact groundwater recharge, as well as flooding the dam area which contains threatened species. It will also cut across Marrakai Road resulting in an inconvenient detour around the dam.



The Middle Arm Industrial Precinct must be stopped as a matter of public health and safety!

