Our Capabilities

NEPEAN® Conveyors are a wholly Australian owned company specialising in the design, in-house manufacture, installation and servicing of overland, underground and surface belt conveyor systems and bulk materials handling projects for over 25 years.

NEPEAN Conveyors are part of the Nepean group and our head office is located at Unanderra (NSW). NEPEAN has forged a solid reputation for robust, practical and reliable designs and quality manufactured equipment.

NEPEAN Conveyors has become the leading technology provider for materials handling in Australia in conjunction with our group partners such as NEPEAN Power (formerly M.I.Power), NEPEAN Longwall and NEPEAN Asia.

When dealing with NEPEAN Conveyors for conveying systems or individual component supply you gain access to:

- In-house specialist conveyor and materials handling designers (mechanical, process, civil/structural, electrical)
- OEM support for Order of Magnitude studies through pre-feasibility studies and bankable studies
- Modern in-house manufacturing
- Full life cycle support
- Global sourcing, including Asian sub-supply
- Single point accountability for your materials handling project

- Design, Engineering and Detailed Drafting
- Source, Supply and In-house Manufacture (mechanical, structural, process and electrical)
- Flexible engagement: eg EPC, EPCM, D+C Contracts
- Performance Warranty: Single point accountability (all disciplines)
- Installation + Commissioning
- Sustainable Technology: eg VVVF energy optimisation systems
- PMBOK Accredited Project Managers
- Lifecycle Services: Audits, Optimisation Studies, Spares, After sales service and Training
Specific Experience:
- Downhill regenerative braking conveyors
- Truck and rail loading and unloading stations
- Feeders / Sizers / Crushing stations
- Transfer stations / Material placement solutions / Port infrastructure
- Overburden removal / Heap leach systems
- Power distribution and supply to 130kV, earthing / switchgear / protection systems
- Complete drift, trunk and main gate solutions
- Splitters, belt winders, clamping stations, belt maintenance stations
- Hazardous area systems e.g. hazardous area Exd solutions
- Functional safety systems to SIL2 and SIL3
- Control system design and functional specification design
- Conveyor drives - BOSS, VVVF, CST, fluid coupling
- Loop take up and belt storage units
- Constant tension winches – eddy-current, hydraulic, VVVF, electromechanical
- Jiffy/ Nifty/ Hefty Combination Drives
- Class A approved workshop for Exd equipment manufacture and overhaul
- Extensive software design tools (CATIA, X-steel / Tekla, MicroStran, Autodesk Inventor)
- In-house pulley design and manufacture, deadshaft / liveshaft, various types of lagging
- Comprehensive mechanical design facility e.g. DEM + FEA modelling

- 1200+ employees
- Industry leading world class LTIFR
- > 80,000m² manufacturing / fabrication facility
- NEPEAN operates in the USA, Canada, Europe, Middle East, Africa, Asia, New Zealand and Australia
- Strong balance sheet backed with significant fixed assets
- One of Australia’s largest privately held engineering businesses
Completed Projects

**Atlas Iron:**
- Port Hedland Utah Point Expansion to 15mtpa
- Owner: Atlas Iron
- Project Type: Turnkey
- Completion: 2013
- Value: $15M
- Scope: Major plant expansion consisting of overland transport conveyor

**Vale:**
- Carborough Downs: ROM Stockpile Conveyor + Underground Coal Clearance System
- Owner: AMCL (now Vale)
- Project Type: Design + Construct
- Completion: 2006
- Value: $25M
- Scope: Design and supply entire coal clearance system on greenfield site, including: 2500tph 1200mm ramp conveyor / cross conveyor / eastern mains conveyor. Development phase =1600tph. Full production =2500tph

Ramp conveyor included covered gallery discharging onto 20,000m³ ROM coal stockpile. Project included civil design of footings and slabs and reduced speed conveying operation during development phase of operation.
Completed Projects

Idemitsu  Boggabri Coal: Coal Terminal Upgrade
Owner:  Idemitsu Resources Australia
Project Type:  Turnkey – Fixed Price Design and Construct
Timing:  2010
Value:  $15M
Scope:  Design and construct 1500tph stockpiling system including: conveyors, radial stacker, feeders, unloading station, loadout station, roadways, HV substation with PF correction, control system, dust control, earthworks.

Ramp conveyor included covered gallery discharging onto 20,000m³ ROM coal stockpile. Project included civil design of footings and slabs and reduced speed conveying operation during development phase of operation.

Above: Overview of the BCTU site

Above: Completed BCTU works showing CV02, CV03 and CV04 stacker conveyor in operation
Completed Projects

KMG: Ridges Iron Ore: Wyndham Barge Loading Facility
Owner: Kimberley Metals Group
Project Type: Design, Supply, Install, Commission
Completion: 2011
Value: $15M
Scope: Design, supply, installation assistance package for greenfield 1755tph barge loading facility site, incorporating: jetty overland conveyor, pivot conveyor, substation and control system

Significant design criteria: The pivot conveyor was particularly challenging, with the head end positioned on a pontoon capable of moving significantly in all directions, loading into a rotating hopper and having to accommodate an 8.5m tidal range and withstand cyclonic wind conditions.

Design of the CV01 jetty conveyor was also very challenging in terms of the footing design for intertidal zone land and the over-water area. Management of differential settlement was paramount in ensuring system performance did not erode due to environmental conditions.

Above: KMG aerial photo of site showing overland/overwater conveyor installed over intertidal waters (differential settlement a key design parameter)

Above: ore is loaded onto barges via the Telestacker, which is mounted on the pontoon at the head end of CV02. These are then towed 1.2km to waiting ships in the Cambridge Gulf for delivery to Sinters’ markets in China.
Completed Projects

Anglocoal: Kayuga Mine: KD01 Trunk Conveyor
Owner: Anglocoal Australia
Project Type: Turnkey (Design + Construct)
Completion: June 2004
Value: $8M
Scope: Design and supply 4200tph 1800mm trunk conveyor for new mine - incorporating 500kW VVVF drives, regeneration system, 160kNm dynamic brakes, 11kV/415VAC substation starter

‘One of the most technically challenging conveyor design projects undertaken in Australia’

The uphill/downhill configuration (inverted boomerang profile) means conveyor power demand varied from -800kW (ie regenerative) to +400kW when loaded on uphill sections only. Due to high risk of damage to plant and risk to safety of personnel in the event of brake failure under any conditions (including power-loss), multiple redundancies were designed into the operation and control of the braking systems to ensure controlled braking under any circumstance. Commissioning included deliberately flooding the conveyor under a worst case load profile, then dropping power to the substation to mimic a power-loss condition under extreme loads, with one of the brakes disabled.

Innovation . Dedication . Specialisation
Completed Projects

Whitehaven Coal: Narrabri Coal Drift and Skyline Conveyor System
Owner: Whitehaven Coal
Project Type: Turnkey (PFS Development through to Design + Construct)
Completion: 2010
Value: $20M
Scope: Turnkey design and construct package for greenfield 3600tph system, including: drift conveyor, skyline tripper stockpile conveyor 11kV/690V/415V electrical substation and switchroom installation, commissioning and training packages

The drift conveyor was designed to be functional firstly as a drift development conveyor with a sacrificial belt and installation of 2 x 1000kW VVVF drives, and once tunnelling by the roadheader is completed to the coal seam, the conveyor shall be reconfigured for production by adding a third 1000kW drive, supplying a tail take-up system and pulling on the steel cord belt.

Stockpiling of ROM coal is via a travelling tripper mounted on an elevated gantry structure with 30m spans and walkways fitted on both sides. Stockpile height was limited by the mine development application and approval, and thus the client sought to maximise the live stockpile area provided by the conveyor system. Rail clamps provide security against unwanted movement of the travelling tripper, which discharges either side of the gantry.

Above: Drift and skyline conveyors
Above: Skyline conveyor with tripper in operation and stockpile conveyor

For more information:
1800 NEPEAN | www.nepeanconveyors.com

NEPEAN® CONVEYORS ARE AUSTRALIA’S MARKET LEADER

NEPEAN Conveyors operates the most advanced, high tech idler production facility in Australia we offer complete conveyor system solutions and support services to the mining and resource industries.

NEPEAN Conveyors, internally developed, industry-leading software and our extensive manufacturing capabilities have allowed us to provide an extensive portfolio of products and services to independently deliver unique, high quality results. NEPEAN Conveyors offer a one stop conveyor solution.

WITH MORE LOCATIONS, WE’RE NEVER FAR AWAY

We design and manufacture in multiple locations around Australia. We are strategically located close to major mining areas so we can service our iron ore, coal, hard rock and port customers.