ENERGY TRANSITION & THE NET ZERO PATHWAY

It's Interactive

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Introduction to Stantec

Regardless of size, scope, or scale, we can make your Energy Transition goals achievable.

If you think the energy transition is simply about shifting to renewable sources of energy, we encourage you to think again.

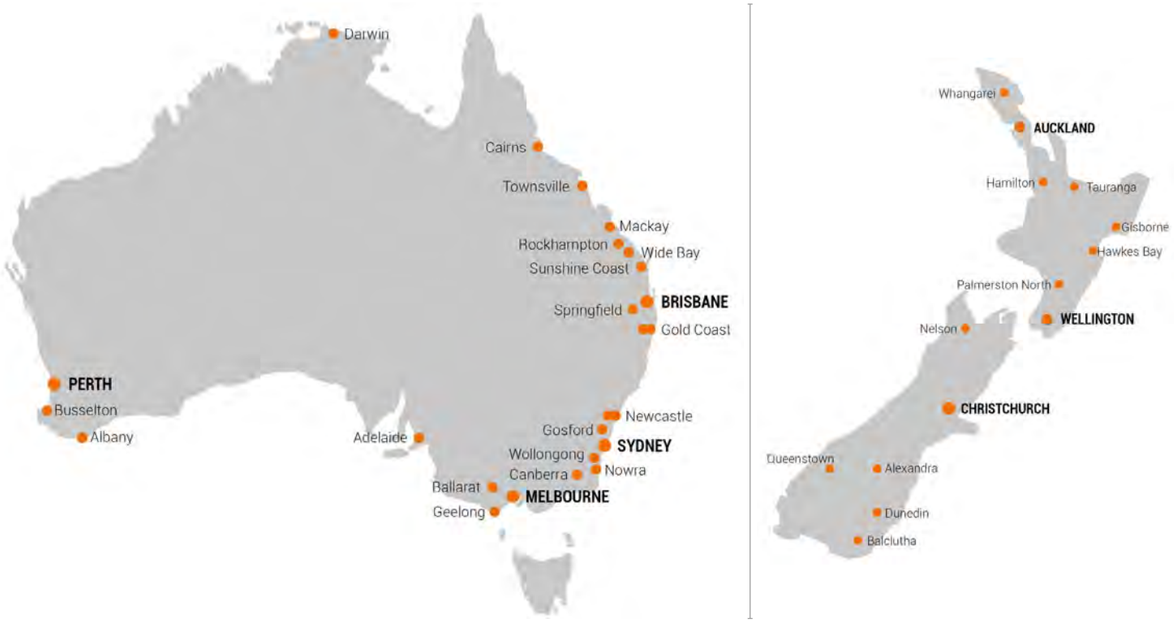
The Energy Transition is a global phenomenon. It is the simultaneous rapid evolution of multiple markets at a pace not seen since the Industrial Revolution over 200 years ago. While most commonly recognised as the evolution from conventional sources of energy towards renewables, the Energy Transition is seeing fundamental changes across energy and energy-dependent markets. Impacting much more than the shift in energy sources and production, the Energy Transition is revolutionising how energy and resources are developed and consumed across markets. It is changing the nature of what infrastructure can do, mitigating our environmental impact, and unlocking potential for a cleaner, more efficient way of life.

At Stantec, we're advancing the **Energy Transition and Net Zero Pathway** globally by helping our clients achieve:

- Net Zero Pathway, RoadMap and Energy Master Planning
- Environmental, Social, and Governance (ESG) Action Planning
- Carbon / Greenhouse Gas (GHG) Capture and Climate Action Planning
- Sustainability and Resilience Action Planning
- Technology and Digitalisation Planning
- Supply Chain and Electrification Planning
- Alternative Fuel Development Planning
- Renewable Energy and Energy Storage Development Planning

Regardless of size, scope, or scale, we can make your Energy Transition planning and goals achievable.

- *Stantec Office Locations Australia and New Zealand:*



ACTUAL DEPLOYMENTS

We've moved beyond conceptual work and are well into execution and deployment in some of the most advanced Energy Transition markets. Connected and automated vehicles, system automation, microgrids and net zero buildings - our portfolio of actual deployments sets us apart.

COMPLETE LIFECYCLE SERVICES

The opportunity to implement aspects of the Energy Transition exist along every point of a project's lifecycle—from business case to adaptive reuse of existing assets at the individual, community, or regional scale. Our multidisciplinary team of experts is scalable and designed to meet your energy transition goals, no matter where you are on your energy transition journey.

INNOVATION THROUGH INTEGRATION

Successful Energy Transition projects require levels of innovation only possible through fully integrated, multidiscipline teams. Stantec's breadth of Energy Transition markets and services means we can connect with the often distinct aspects of a project together, and maximise its potential.

GLOBAL EXPERTISE, LOCAL SAVVY

Stantec's 2,500+ Australia and New Zealand professionals combine cutting-edge technical services with local experience to provide Energy Transition services that are in tune with regulatory, social, and environmental requirements as well as the needs of our clients.

SCALABLE, NEUTRAL, AND MADE FOR YOU

To make sure we can provide the right scale and scope of Energy Transition services, we've taken a holistic approach. Stantec focus on delivering science and skill enabled services and a product-neutral approach, allowing us to scale our services proportionate to your Energy Transition growth plans.

Our Services

We combine our design, process, and expertise to help decarbonised assets to run cleaner and more efficiently.

At Stantec we combine our process engineering and design capabilities to decarbonise your assets so they run cleaner and more efficiently. We work towards the global climate mandate to clean up your energy demand, and your supply chain, by moving forward with electrification of infrastructure. By combining power generation expertise with power grid experience, we create lasting value.

Energy Transition and Net Zero Pathway Planning

PLANNING, ANALYSIS, AND INVESTIGATION – GAP ANALYSIS PROCESS

Feasibility Studies/Probability of Cost and Risk Assessments

- Location and accessibility best practices
- Infrastructure planning and design
- Site inspections and audits
- Code compliance
- Environmental assessments and regulatory approvals
- Geotechnical analysis
- Enterprise automation and technologies

Studies of Power and Transport Infrastructure

- System studies and utility grid impact studies
- Renewable and distributed energy resources (DER) / Microgrids
- Energy storage and capacity
- Telecommunications
- Electric Vehicle (EV) and battery and charging infrastructure assessments
- Traction power studies for Light Rail Transit (LRT)

Decarbonisation and Climate Adaptation Planning

- Carbon/GHG;
  - » Benchmarking, inventory, management
  - » Emissions reduction regulatory compliance
  - » Offsetting, trading advisory
  - » Capture, utilisation, and storage
- Procurement and supply value chain management
- Financing, grants, and incentives
- Climate action planning
- Sustainability action planning
- Environmental, social, and governance (ESG)
- Power, energy and renewable – risk and asset management
  - » Infrastructure design, development, and operation
  - » Energy management – ISO 55000

Detailed Engineering and Design

- Detailed electrical/civil/structural and infrastructure design
- Planning, modeling and engineering
- Planning/advisory services
- Efficiency policy and strategy
- Standards

Project Management and Construction Management

- Planning
- Cost and quality controls
- Equipment specification
- Scheduling
- Procurement and supply chain support
- Asset management and risk management support

Start-Up, Commissioning, and Operations as a Service

POWER AND RENEWABLE INFRASTRUCTURE

Stantec's power team combines decades of power grid and industrial expertise, making electrification projects grid compliant and successful.

- Grid analysis and modeling
- System studies
- Interconnection analysis
- Substations
- Distribution
- Generation and DER

INDUSTRIAL INFRASTRUCTURE

From heavy industrial process electrification to major equipment and fleet electrifications, Stantec can help transition industrial operations to cleaner, sustainable electrified operations.

- System studies
- Process optimisation and automation systems
- Heavy equipment electrification
- Heavy industrial process conversion/electrification
- Fleet electrification
- Traction power
- Transportation electrification infrastructure
- Procurement and supply chain assessments

TRANSPORTATION INFRASTRUCTURE

Helping our communities gain an economic and environmental advantage.

- Autonomous vehicles
- Zero emission vehicle and electrification
- Fleet automation
- Refueling, warehousing, and delivery automation
- Mobility assessments and planning
- Electric vehicle readiness and planning
- Road infrastructure assessment and layouts
- Energy and consumption assessment

BUILDINGS INFRASTRUCTURE

Stantec's energy master planning support can scale from a building level to entire building portfolios and developments.

- Climate analysis
- District energy analysis
- Smart buildings and smart infrastructure
- Utility incentive coordination
- Net zero and new positive buildings
- Carbon/GHG neutral retrofitting

ELECTRIFICATION OF INFRASTRUCTURE

Helping transition infrastructure to 100% electrification.

- System analyses and modeling
- Building electrification
- Energy optimisation
- Building upgrades
- DC conversion
- Power-over-Ethernet (PoE)
- Fleet electrification and support

Our Projects

Working on integrated and innovative solutions that optimise energy generation, focus on renewables and find sustainable ways to generate power.

Chichester Solar Gas Hybrid Project

As part of their drive to reduce carbon emissions, Alinta Energy set out to power two mines in the Pilbara region of Western Australia through a gas-fired and solar-generated hybrid power solution. Our job? Engineering, procurement, and construction management on the execution phase in Pilbara.

The project consisted of 60 kilometers (37 miles) of 220 kilovolt power transmission line extension—with an associated 3 kilometers (2 miles) of 33 kilovolt and 11 kilovolt lines to connect existing power stations to the network—a 60 megawatt, single-axle solar farm (2 x 30 megawatt solar arrays), two substations, and associated control systems.

The project was both greenfield and brownfield with significant interfacing with varying third-party assets, including existing operational power stations and live mine sites. When we had to consider heritage-sensitive areas on the ground, we used helicopter conductor stringing to avoid access, and allow us to be respectful of these precious areas without diverting the required work.

With this combination of gas-fired and solar-generated power, two major iron ore mines are now operating with reduced carbon emissions and improved sustainability.

Northern Goldfields Solar Project

The Northern Goldfields Solar Project was initiated under a power purchase agreement between BHP Nickel West and TransAlta. The goal? To provide fuel savings and reduce BHP's scope 2 electricity greenhouse gas emissions from its Leinster and Mount Keith nickel mines by 540,000 tonnes of CO2e (carbon dioxide equivalent) over the first 10 years of operation. We're currently working as the project management consultant for TransAlta on the development and execution of two solar farms and a battery energy storage system that will serve this goal.

The project includes a 27.4-megawatt Mount Keith solar farm, a 10.7-megawatt Leinster solar farm, a 10.1-megawatt / 5.4-megawatt-hour Leinster battery energy storage system, and interconnecting transmission infrastructure—all of which will be integrated into TransAlta's 169-megawatt Southern Cross Energy North remote network.

This renewable energy project is the first solar photovoltaic build in Australia for TransAlta, the first large-scale onsite solar farm and battery that BHP has commissioned, and supports BHP's emissions reduction targets—delivering lower-carbon, sustainable nickel to its customers.

Our People

We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships.

WAYNE PEEL

TITLE: Regional Director
LOCATION: Perth, Western Australia

Wayne has more than 25 years of experience in Mining, Engineering, Project Development and Executive Management having held both project and senior management roles for several Engineering Consultancies, Information Technology and Construction companies. Wayne has an MBA, Bachelor of Engineering and is a member of Engineers Australia and the Australian Institute of Company Directors.

STEPHEN BEAMOND

TITLE: Group Leader
LOCATION: Brisbane, Queensland

Stephen has 30 years' experience in the resources industry with expertise in the Minerals Processing (Alumina, Bauxite, Coal, Diamonds, Base, Battery, and Precious Metals), Materials Handling, Oil and Gas (Upstream CSG, LNG and conventional), Pipelines, Refining, Power Generation and Supporting Infrastructure sectors. Stephen has held roles of Executive General Manager, Director, Group Manager, General Manager and Corporate Estimating Manager.

TAVIS MACKENZIE

TITLE: Principal Project Manager
LOCATION: Perth, Western Australia

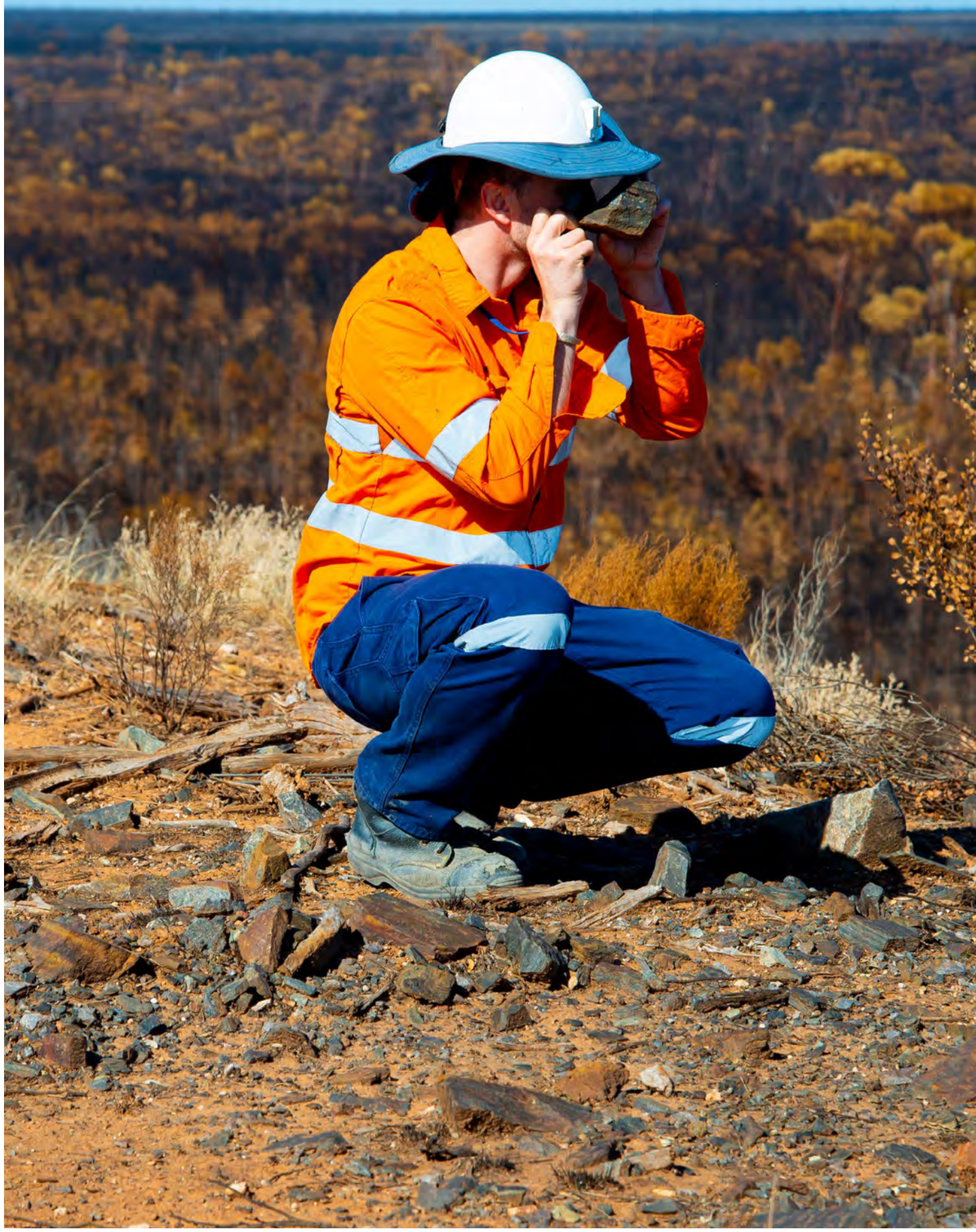
Tavis has over 20 years of experience in the resources industry and has worked for several key mining companies in Australia including Rio Tinto, Fortescue Metals Group, BHP, Roy Hill, Citic Pacific and Minara Resources. Tavis has completed major greenfield projects, as well as sustaining capital brownfield projects. He has led successful teams in both the corporate and field environment, safely delivering innovative solutions for clients. In recent years he has been working as the Project Manager on the development and execution of the Northern Goldfields Solar Project.

MARK PRICE

TITLE: Sustainability Manager, Energy Transition Sector Lead, Associate Director
LOCATION: Perth, Western Australia

Mark has a robust grasp of code and a can-do attitude towards issues, making him popular with clients as he identifies effective solutions. He was promoted to Project Engineer in recognition and latterly invited to become an Associate at Stantec in 2015 and then a Principal in 2019. Mark has recently been appointed Associate Director, Sustainability Manager, Energy Transition Sector Lead.

Our role must be to look critically at how we power our communities and improve quality of life. It will take more than just those of us that work in the energy and resources industry—it will take everyone. We must think creatively, open dialogue, and lead the way forward.



DESIGN WITH COMMUNITY IN MIND

At Stantec, we help mining companies in accordance with applicable professional standards access natural resources and conduct business in an environmentally sustainable way. From front-end studies to mine closure and reclamation, we keep clients at the forefront of a rapidly changing industry.

With decades of creative solutions for clients and communities around the world, our approach is defined by a commitment to communities, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

CONNECT WITH US

STANTEC.COM