



WorleyParsons

resources & energy

EcoNomics™

Improve

Power Business Profile





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“There is no task so important or so urgent in our business, or our customers’ businesses, that it overrides the need to work safely...”

John Grill, WorleyParsons CEO

Zero Harm is our corporate vision for health, safety & the environment (HSE).

We are committed to our vision; it applies to all of our operations, at all times, in all locations, and at all levels of responsibility.

We will actively work to align our expectations and behaviors with those required to achieve our vision through a dedication to continuous improvement.

The launch of our HSE framework, OneWay™, enables us to further align and consolidate our global systems and procedures and continue to work with our personnel to reinforce a culture that underpins our drive to achieve our corporate differentiator of industry leadership in the HSE performance.



Corporate Overview

WorleyParsons is a leading global provider of professional services to the resources & energy sectors, and the complex process industries.

We cover the full asset spectrum, both in size and lifecycle, from the creation of new assets, to services that sustain and improve operating assets.

Our business has been built by working closely with our customers through long-term relationships, anticipating their needs and delivering inventive solutions through streamlined, proprietary project delivery systems. Strong growth continues to characterize our performance both through organic development and through strategic acquisition as we strive to provide tailored services wherever our customers need us.

- Power
- Minerals & Metals
- Hydrocarbons
- Infrastructure and Environment

37
countries

114
offices

31,700
personnel

EcoNomics™ Delivering profitable sustainability

EcoNomics™ is our range of services and technologies that profitably embed environmental, social and financial sustainability into project delivery, across the asset lifecycle. It is a seamless extension of our established project delivery capability in the key areas of Assessment, Efficiency, and Treatment & Mitigation. We are committed to working with our customers to create solutions to meet the green challenge while staying in the black.

Power

WorleyParsons provides a comprehensive range of professional services to the global power industry.

For over 100 years, WorleyParsons has worked with our customers to develop and execute effective solutions to a diverse range of energy challenges facing the industry. WorleyParsons delivers comprehensive service in the energy industry for hundreds of power, industrial, commercial, and government customers across all phases of the asset life cycle. Our global expertise is captured through “Centers of Excellence” and is coupled with our local knowledge of regulations and infrastructure to ensure the right resources are utilized during the project execution regardless of geographic location.

WorleyParsons works in all five phases of an asset’s life cycle. Each phase can correspond to a customer’s decision gate for project sanction. Our *Select* business group provides consulting services to asset owners, operators, investors, financial institutions and governments by bringing extensive experience in the front-end, and value adding phases to maximize investment return and underlying confidence. Our EcoNomics™ initiative enables our customer to quantify the social, ecological, and community impacts of existing and planned facilities during the planning phase of a project.

For the Execute Phase, WorleyParsons takes a full-service approach to project delivery. We provide project management, engineering, procurement and construction management services from detailed engineering, through vendor quality assurance, construction management, commissioning and start-up and operations. Our global procurement group uses its global networks and relationships with prequalified localized equipment manufacturers. Our flexibility, capability and partnering culture means we can act as the prime contractor or work as a member of a team.

Our *Improve* business supports and improves customers’ assets throughout the operating lifecycle. *Improve* specializes in reducing carbon footprint, improving output and efficiency, and reducing production costs of plants.

740

Power Generating Units

18

Nuclear Units
Engineer of Record

192,800+

MW

Project Phases



WorleyParsons’ experience covers all five phases of the asset lifecycle. In each of these phases we understand the critical issues and apply our specialist business lines, *Select*, *Deliver*, and *Improve* to enable our customers to achieve their business objectives.

Our phased approach enables consistent project delivery worldwide and WorleyParsons’ project systems are fully aligned to this process.



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WorleyParsons *Improve*

Asset Integrity and Business Performance Improvement.

Improve is a service focused on improving our customers' business outcomes. It is a tailored service to meet the needs of individual sites.

WorleyParsons' *Improve* is a core service for existing plant operations focused on the delivery of major projects, upgrades, efficiency improvements and maintenance projects, project portfolio management and production support services to sustain assets and improve business performance.

Using the knowledge accumulated from more than 120 alliances and long-term contracts, we have developed a culture along with a suite of unique tools, systems and delivery methodologies that incorporate industry best practice.

We have strong industry-specific knowledge and a track record of success using our performance-based relationship contracting model. The trust that this generates enables WorleyParsons to deliver maximum value to customers using local teams, supported both regionally and globally.

WorleyParsons has more than 9,000 personnel working in over 120 alliances executing more than 20,000 projects annually with a capital value in excess of USD 4 billion.

WorleyParsons' *Improve* draws upon our experience, capability, tools and systems to provide a variety of services within the operate phase. *Improve* can be delivered through an alliance contract and relationship, is aligned to our customers' requirements, and delivers value add and improvements to our customers and their assets.

Improve seeks to deliver for Power Customers a better market position including:

- Reduced cost
- Improved process efficiencies
- Increased productivity from existing assets
- Best-in Class safety performance

We deliver these benefits by accessing our capabilities in plant assessment and evaluation, major project execution, portfolio project management, outage readiness and execution, and production services including operations and maintenance.

120+

Improve Contracts Worldwide

9,000+

Improve Personnel

20,000+

Improve Projects/Year



Health, Safety, and the Environment (HSE)

WorleyParsons *Improve* specifically focuses on HSE for project delivery on operating sites.

OneWay™ is an enterprise-wide integrity management framework which lays down corporate expectations for achieving the Zero Harm vision, and in turn provides links to the policies, standards and processes that WorleyParsons aims to follow in daily operations to meet the expectations.

In striving to achieve zero harm to people, the environment and assets, the scope of OneWay™ covers much more than a conventional HSE program. It also addresses matters such as risk management, technical integrity, competency, management of change and emergency response across all sectors of WorleyParsons' business. In addition, it provides guidance on how WorleyParsons works with our joint venture partners, customers, vendors and contractors to engage them in working towards the same vision.

OneWay™ is one of several distinct management programs employed by WorleyParsons to deliver superior business outcomes. These programs involve different ways of viewing the business and at times may interact or overlap. Consistency of these programs is assured in that they all work from a common suite of underlying policies, standards and processes residing within the WorleyParsons Enterprise Management System (EMSV3).

OneWay™
to zero harm

30.2

Million Power
Workhours

0.13

Lost Work
Case Rate
(U.S. OSHA)





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Plant Improvement Assessment/Evaluation

WorleyParsons provides a range of technical, operations and management capabilities to identify, assess, and select plant performance improvement opportunities.

Our plant assessment capabilities include:

- Life extension
- Rehabilitation
- Condition assessments
- Asset management
- Engineering solutions
- Operations analysis
- Management consulting
- Site organization review and design – greenfields and brownfields
- Plant re-powering options
- Power plant co-firing options
- Construction management and outage planning/execution
- Plant performance improvement
- Scope evaluations for future outages

Our assessment experience ranges through gas, coal, biomass, solar, wind, nuclear, and hydro power plants.



Project: Sixth Street Heating Plant

Customer: Alliant Energy

Phases: IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

United States of America

In June of 2008, a “100 Year” flood at the Sixth Street Station in Cedar Rapids, IA rendered all systems inoperable with many systems sustaining major damage. WorleyParsons was contracted to evaluate the structural damage and all equipment including cost effective alternatives, and prepare a cost validation with a schedule to restore and rebuild the plant to meet a 20 year lifespan.

The most significant changes were a new steam turbine, boiler modifications, upgraded coal handling, new DCS and controls, new turbine roof, and a new emergency power system. Due to an extremely tight timeline to complete the evaluation, resources were mobilized from multiple offices to complete the task on time and in a quality manner.



Project: Collie Power Station Uprate

Customer: Verve Energy

Phases: IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

Australia

WorleyParsons performed an assessment and necessary engineering of the boiler to reduce fouling issues to increase the plant capacity from 330 MW to 340 MW. Modifications included installation of a new intelligent soot blowing system, modifications to the economizer and ash handling system, and boiler and mills retuning. The project successfully delivered greater reliable capacity of 15 MW.



Project: Reftinskaya 3800 MW Coal-fired Power Plant Ash Handling Modernization and Upgrade

Customer: ENEL (formerly OGK-5)

Phases: IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

Europe

WorleyParsons is providing comprehensive design services for the reconstruction of the largest coal-fired power plant in Russia (3800 MW). The goal is to switch the operation from wet mode ash handling and deposit to dry mode, thus reducing the amount of required technical water and extending the thermal power plant operational life time to 40 years with a possibility to increase the capacity factor from the current ~ 50–56% up to 80%. After completing the process design, WorleyParsons’ services will include tendering, engineering support to the Owner during construction, commissioning, and start-up of all ash handling equipment.



Project: Nanticoke Coal-Fired Station Water Pond Rehabilitation

Customer: Ontario Power Generation

Phases: IDENTIFY EVALUATE DEFINE EXECUTE OPERATE

Canada

Develop preliminary engineering and associated total installed cost and schedule for the rehabilitation of an on-site water effluent pond at this eight unit 3,640 MW coal-fired generating plant. WorleyParsons was able to bring this winning solution to OPG, through collaboration between the Mississauga and Markham offices and the existing Nanticoke *Improve* relationship.





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Major Project Execution

Planning and successful execution of major projects for existing facilities is a cornerstone of *Power Improve*.

WorleyParsons' approach to project delivery for existing plants recognizes the increased complexity inherent in the integration of a new project with an existing plant, since the construction, commissioning, and start-up has to be done without disrupting ongoing operations.

This requires a high degree of project pre-planning taking into account:

- Safety and security issues within an operating plant
- Unforeseen site conditions
- Interfacing within a plant
- Validation of stated as-builts for existing equipment
- Site lay-down, material, and equipment delivery and logistics
- Under ground systems including abandoned in-place materials
- Availability of water, compressed air and other systems

Our major project experience includes creating and delivering unique solutions, such as construction of a deck over a major highway for a seven unit land locked plant to support the air quality equipment, repowering of simple cycle gas turbines to combined cycle on constrained sites, and addition of cooling towers to improve plant reliability.

The *Improve* culture enhances the successful delivery of major projects focusing on integration, innovation, and flexibility with the primary focus on bringing value.

\$3B

Value of Major Power Projects

2000

Major Power Projects Personnel



Project: Maritza East 2 TPP**Customer: Maritza East 2 TPP EAD, Ministry of Economy and Energy****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**Bulgaria**

WorleyParsons is working as a consultant to the owner for the rehabilitation of Units 1 to 6 (turbines and generators) and for the construction of flue gas desulfurization facilities for Units 1 to 4 of Maritza East 2 - the largest thermal power plant in Bulgaria.

Responsibilities assigned to WorleyParsons cover assessment of the compliance of the investment projects, construction supervision, consultancy services on environmental protection, risk control and management, quality assurance management, control of equipment factory acceptance tests, supervision during tests and commissioning, services in warranty/guarantee period, review of technical documentation, consultations on financial and contract-legal issues.

**Project: Environmental Compliance Program****Customer: Confidential****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**United States of America**

WorleyParsons is performing all necessary fleet-wide services for the engineering and design, procurement of equipment, preparation of construction specifications, and management of construction for the air quality control systems (AQC) at a mid-west energy company's coal-fired stations. Support services for the 12 units include AQC system elements that include combinations of bag houses, activated carbon injection for mercury control, absorbers for SO₂ control, SCR for NO_x control, and associated balance-of-plant modifications.

**Project: Loy Yang B Auxiliary Firing Conversion****Customer: Edison Mission Energy****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**Australia**

WorleyParsons designed, procured, installed, and commissioned an auxiliary firing system at Loy Yang B 2 x 500 MW coal-fired station. The project converted the 120 MW firing system to natural gas. WorleyParsons' scope included integration with the existing burner management and control system. The project was successfully completed within planned unit maintenance shutdowns.

**Project: Senoko Power Station Stage 1 Repowering****Customer: Senoko Power Ltd.****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**Singapore**

WorleyParsons was the Owner's Engineer of this SGD 670 million project at Senoko Power Station in Singapore. The project required the repowering of 3 x 120 MW condensing steam turbines (25 years old) within the conventional oil-fired steam power plants into multiple shafts combined cycle power plants of 360 MW each in two phases. Alstom Power GT26B gas turbines were selected as the prime mover. Each block has a configuration of 1GT+1HRSG+1ST. The gas turbines have dual fuel (natural gas & diesel oil) capabilities, and were designed and optimized to fire natural gas from two sources.





Project Portfolio Management

WorleyParsons *Improve* takes a portfolio approach to managing projects to assist our customers achieve their business objectives.

A large part of WorleyParsons' *Improve* business is the development and execution of a portfolio of small to medium projects at brownfield sites. Through our 120+ *Improve* long-term performance-based contracts, we execute over 20,000 projects annually with a capital value of over USD 4 billion.

Our *Improve* team understands how critical sound portfolio management is to our customers' achievement of business objectives. The *Improve* systems team has invested heavily in the refinement of the "*Improve* >" portfolio suite of tools and processes to provide the very best portfolio management platform. This unique offering has been structured to facilitate smooth customization and integration with our customers' business processes.

Improve > portfolio ensures overall control is maintained. *Improve* > portfolio is designed to optimize capital planning and is suitable for the full range of projects typical in brownfield environments.

Improve > portfolio enables:

- Project register
- Project prioritization
- Cost control
- Estimating
- Planning
- Resource loading
- Portfolio reporting
- Risk analysis

With many of our *Improve* contracts each managing 200+ projects during a financial year, *Improve* > portfolio can be scaled up or down to suit all sizes and numbers of projects. The tools have been structured to allow consistent management of all activities in a portfolio of projects as indicated in the portfolio model illustrated below.



Project: Fossil/Hydro/Nuclear Fleet Engineering

Customer: Tennessee Valley Authority (TVA)

Phases: IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

United States of America

The project encompasses the management and execution of multiple engineering and related services assignments at 11 fossil plants, 32 hydro plants, and three nuclear plants - all TVA generating sites.

WorleyParsons works in an integrated team with TVA. The work covers the full spectrum of plant assessments, modifications, and performance improvements including low NOx burners, control room upgrades, environmental compliance, hydro modernization, balance-of-plant (BOP), and nuclear work package projects.



Project: Fossil/Hydro Engineering

Customer: Ontario Power Generation (OPG)

Phases: IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

Canada

WorleyParsons has been actively involved with the progress at Naticoke and several other fossil and hydro OPG generating stations since 2003. Throughout this long-term contract, WorleyParsons has provided the following key services: owner's engineer, engineering analysis, engineering support services, technical feasibility investigations and recommendations, detailed design work, and outage management support and logistics specialists. Work was completed for projects such as biomass evaluation, DCS drawing upgrade, gallery drains systems design, coal guarding, plant condition assessment, transformer replacement, and a protection coordination study.



Project: Power Sector Support Program II Consulting and Construction Management

Customer: Egyptian Electricity Holding Company (EEHC)

Phases: IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

Egypt

In response to rapid economic growth, expanding population, and market pressures, Egyptian Electricity Holding Company (EEHC) embarked on an ambitious electricity generation development plan. USAID funded EEHC's Power Sector Support Program II, which includes 11 stand-alone projects encompassing controls upgrade for five power plants, three 220 kV substations, three 220 kV reactive power compensation installations, short circuit test lab, transmission tower testing facility, and the upgrade of long-range planning software. EEHC achieved operational benefits from the program with improved start-up times, 1.5% increased efficiency, and 1.0% delivered fuel savings.



Project: CoSyn Alliance

Customer: CoSyn Alliance

Phases: IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

Canada

WorleyParsons and Syncrude Canada Ltd's alliance is CoSyn. Based in Edmonton, Alberta and the Syncrude facility, CoSyn supports Syncrude's Fort McMurray operations. This alliance is a long-term commitment to specific business objectives, and uses the resources of both parties to improve their core businesses. CoSyn is responsible for providing a broad range of engineering and project services.





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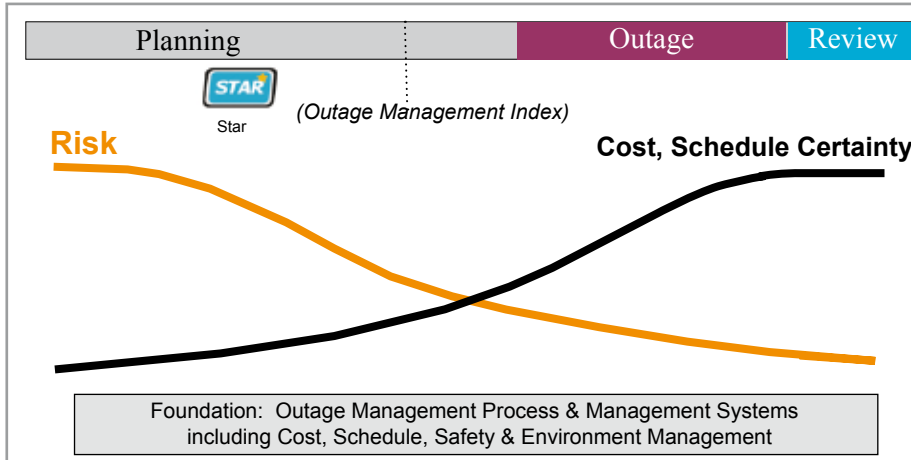
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Outage Planning/ Readiness & Execution

WorleyParsons' *Improve* has the experience, the people, and the tools to tailor an approach to plan and deliver single and portfolios of outages.

Bringing together 'Best Practices', processes, and practitioners from across the industry, WorleyParsons works hand in hand with the customer to mitigate risk and manage the outages to deliver the agreed upon outcomes.

Successful outage execution utilizes proven project management principles with the additional complexity required to manage changing scope, cost, and schedule resulting from condition assessment. WorleyParsons' project management combined with its generating plant experience, supported by its management systems, enable a successful record in power plant outage delivery.



40

Units

17

Outages in 2008

**10,800
MW**

Two processes utilized in our outage management include Star and OMI:



STAR- Shutdowns, Turnarounds, and Alignment Reviews- (developed through CII research) Stakeholder involvement before detailed engineering and detailed construction planning begins is KEY! STAR is a disciplined assessment to address multiple projects and maintenance BEFORE they converge into a single outage competing for resources, space, labor, equipment, and materials. Owner expectations across all projects collectively are reviewed, scored, and actions assigned to close any potential risk to the outage.



OMI- Outage Management Index

The objective of the process tool Outage Planning and Management is to systematically reduce risk to the plant renovation and outage (and thus the client) by defining and measuring readiness expectations along a timeline. This is accompanied with rigorous review or evaluation of the defined deliverables and taking early action on that requiring added management attention. An index is plotted each step of the way to trend improvement in "Readiness" to perform the outage and to bring focus to areas needing management attention. The result is a well planned and executed outage.

Project: G•UB•MK Fossil/Hydro Plant Modifications**Customer: Tennessee Valley Authority (TVA)****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

United States Of America

Since 1991 G•UB•MK Constructors (a joint venture sponsored by WorleyParsons, which includes Williams Plant Services and URS Washington Division) has been providing construction modifications and supplemental maintenance at six of TVA's 11 coal-fired facilities, all 29 hydroelectric facilities (46 total dams), 1 pumped storage facility, and the Power Service Shop II metal fabrication facility.

G•UB•MK plans, estimates, schedules, and executes outage and non-outage work through direct hire of union craft labor. G•UB•MK Constructors has performed work valued at over \$3 billion.

**Project: Munmorah 2 x 300 MW and Vales Point 2 x 660 MW Outages****Customer: Delta Electricity****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

Australia

WorleyParsons in its joint venture with Transfield Services (TWPS) performs scheduled outages on these coal-fired stations. The Munmorah Unit 3 outage, completed in April 2009, included boiler economizer replacement, boiler survey and repair, turbine auxiliaries survey and repair, and general boiler and boiler auxiliaries repairs in the scope of work.

**Project: Collie Power Station****Customer: Verve Energy****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

Australia

WorleyParsons planned and executed a 2006 major outage at this 330 MW plant. The work scope included LP rotor inspection, turbine valves overhaul, generator rotor removal and inspection, air heater basket replacement and intelligent soot blowing system installations. The outage was delivered by Transfield Worley Power Services.

**Project: 285 MW Coal-fired Power Generation Plant Annual Outage****Customer: Confidential****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE

United States Of America

WorleyParsons successfully completed a 28-day scheduled outage beginning April 1, 2009. Major work consisted of waterwall repairs to all three boilers, the application of metalized boiler coatings, replacement of one boiler grid floor, and refractory repairs in the combustors, cyclones, and backpass areas. Major inspections and repairs were performed on the plants bed and fly ash systems, as well as semi-annual electrical testing, transformer maintenance, and insulator cleaning.





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Production Services

WorleyParsons' production services delivers consistent high value plant performance.

The range of production services include:

- Full facility management
- Management audits
- Operations and maintenance reviews
- Asset management planning
- Asset plan review
- Asset plan implementation including plant maintenance
- Plant solutions
- Operations mobilization
- Start-up services
- Performance benchmarking

WorleyParsons' unique production services value is based on our ability to access our global sources of knowledge and experience on power plant including:

- Diverse plant technology experience in simple and combined cycle, cogeneration, coal-fired, waste to energy, biomass, nuclear, hydro, and renewable energy
- Significant experience in developing and existing emissions mitigation technologies
- Extensive experience in providing project and engineering support to plant operations
- Experienced power station management staff
- Strong relationships and experience working with OEMs
- Operating experience in diverse technologies and fuels

10,500

MW of Coal Start-up/
Commissioning and Initial
Operational Services

6,000

MW of Natural Gas
Start-up/ Commissioning
and Initial Operational
Services

9,500

MW of Operations
& Maintenance
and Construction
Maintenance Services



Project: 250 MW Coal-Fired Generating Station**Customer: Confidential****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**United States of America**

WorleyParsons operates and maintains this 250 MW fluidized bed boiler electric generating station and is responsible for all aspects of plant operations.

The contract commenced in 2003. Since that time, WorleyParsons has negotiated renewal of the project labor agreement and implemented an annual outage plan designed to underpin the desired plant performance.

**Project: UCLA Chilled Water and Cogeneration Facility****Customer: University of California at Los Angeles****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**United States of America**

Following successful engineering design, procurement, and construction services for the 20,900-ton chilled water and 44 MW cogeneration facility in 1993, WorleyParsons assumed complete responsibility through an on-site staff for Operations and Maintenance services of the facility under a five-year contract that was renewed in 1999 under a five-year extension agreement, and again in 2004.

**Project: Bluewaters Power Station****Customer: Griffin Power****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**Australia**

Bluewaters Power Station is 2 x 230 MW coal-fired base load plant. WorleyParsons has provided engineering support for the project development and owner's engineer services for the construction. WorleyParsons, in a joint venture with Transfield Services, has established TWPS, which has completed plant mobilization. The mobilization activities included installation of management information systems, review of Operations and Maintenance manuals, provision of commissioning operators, development of asset management, safety and environment management plans and establishment of the operations organization. TWPS is currently responsible for operations and maintenance of Unit 1 and associated balance-of-plant and will take over Unit 2 when plant performance testing is completed.

**Project: Esperance Power Project****Customer: Western Power Corp.****Phases:** IDENTIFY >> EVALUATE >> DEFINE >> EXECUTE >> OPERATE**Australia**

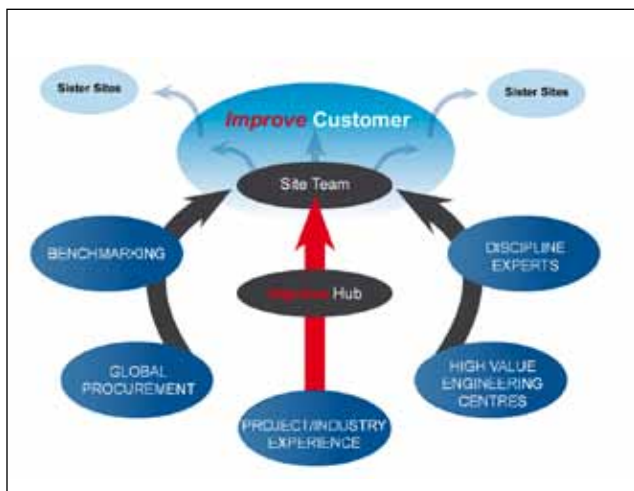
In May 2002, WorleyParsons signed an 18 year Power Purchase Agreement with Western Power Corporation (the Western Australia State-owned Corporation responsible for providing electricity and associated infrastructure throughout most of Western Australia) to provide electricity to the Esperance region. WorleyParsons built a natural gas fired power station with a 150 mm diameter, 340 km pipeline between Kambalda (68 km south of Kalgoorlie) and Esperance. WorleyParsons manages the facility for the owner.





Local Delivery – Global Support

WorleyParsons *Improve* recognizes every customer is unique and that every contract has different requirements. We tailor the work process to best serve our customers' needs.



With 114 offices in 37 countries, WorleyParsons has an extensive global delivery capability. While we have a large geographic spread, we provide services to our customers locally.

To support our site offices, we have established *Improve* hubs around the world, enabling us to pool resources and meet changing resource needs across several contracts within a region.

Hubs have been established in each global region. Hubs provide flexibility to meet changing resource requirements at short notice and enable sharing of systems, best practices and ideas. For example, in Chattanooga, Tennessee, USA our resources are shared across several continents including the Tennessee Valley Authority work which covers eleven (11) fossil sites, several hydro plants, and three (3) nuclear plants.

WorleyParsons has High Value Engineering Centers (HVEC) located in Beijing, Bangkok, Hyderabad and Kuala Lumpur. HVECs provide cost effective access to a large pool of skilled resources. The ultimate value to our customers is reduced costs, improved project schedules and world-class services. In addition to our HVECs, we have offices in Jakarta, Singapore and Manila providing similar services. Each of our *Improve* contracts has the ability to draw upon these services as required.

Project: Hydro Aluminum

Australia

WorleyParsons was requested by Hydro Aluminium Kurri Kurri Pty Ltd (HAKK) to undertake an alternative energy feasibility study.

The aim of the study was to provide Hydro management with information on the viability of renewable energy solar solutions and the impact that Government mandates will have on high energy consumers in the future. The study reviewed HAKK's opportunity to align with the Australian Government strategies in reducing greenhouse gas emissions, and identified opportunities for HAKK in the areas of public opinion; renewable energy using solar technologies to generate Renewable Energy Certificates; potential greenhouse gas reductions; and associated liability for the HAKK plant.

Our study provided a comparison of various forms of solar technology, their indicative capital and operational costs, and their relative benefits in addition to identifying opportunities for HAKK to consider for further investigation. Our recommendation was that the business case for the investment in suitable solar technology be fully developed using a structured and comprehensive approach offered by an EcoNomics™ assessment and consequently have been asked to prepare a proposal for a study.



Best Practice

Applying Best Practices using an integrated approach provides a foundation for driving continuous improvement in performance and product value to reduce total installed costs to the Owner.

We recognize the competitive nature of our business and the necessary support each client requires. Everything we do builds on our experience towards improvement in our performance and of those we serve. Our corporate strategy supports continuous learning, which is a core element of business growth.

Within WorleyParsons, Best Practices are brought together from numerous resources across the industry, such as the Construction Industry Institute, benchmarking with other companies, formal in-house Lessons Learned, new technologies, employee creativity, and industry best practices forums.

Program Objectives

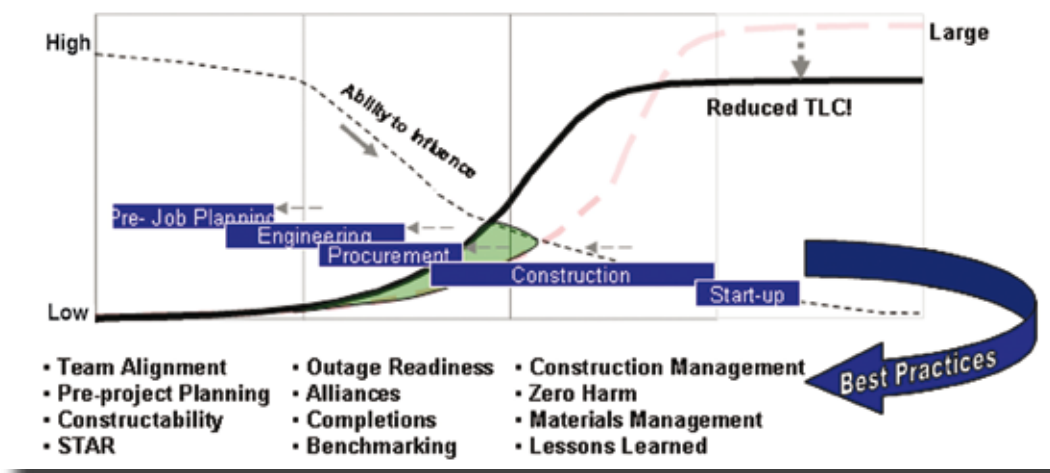
- Disciplined focus and deployment of Best Practices, and continuous improvement
- Proactively seek out new knowledge and learning from within the company and industry
- Consistent application of process and procedures through training
- Established metrics that trend continuous improvement in costs and value
- Adapting Best Practices from industry organizations to change culture
- Mitigating risks to the Owner early in the project delivery process and providing substantive savings to Owner's total installed cost.

Areas of Opportunity

As a major supplier of project delivery services, we believe ALL areas are opportunities for improvement:

- Major projects and small projects within existing facilities
- Alliance management and long term contracts
- Maintenance and reliability
- Outages and system shutdowns

Reducing Total Installed Cost





Alignment

The alignment of customer and service provider objectives is the foundation of success.

Through alignment workshops, both initially and ongoing, we align our people to our customers. We set clear expectations for all team members to ensure a common understanding of the values, which underpin behaviors, and articulate the behaviors which will drive success in our *Improve* relationships.

In recent industry case studies of 13 successful and 12 unsuccessful projects, all 13 of the successful projects went through a structured alignment process. Eleven of the 12 unsuccessful projects did not. A formal structure to bring “alignment” between Owner, engineer, constructor, and all the major entities required to eliminate value leakage and enhance project success is considered a Best Practice and a true value add within the WorleyParsons’ system.

We work with our partners to form a performance culture through implementation of a comprehensive range of tools and processes to ensure successful and safe delivery of projects, and share our experience to build capability in our customers through a structured change management process.

Alignment of Cultures Provides an Optimal Service

Saudi Arabia

WorleyParsons provides engineering and project management services via a multicultural team on our Saudi Aramco Maintain Potential Program (MPP) contract, based in Saudi Arabia (Al-Khobar). This multicultural team has in excess of 320 personnel with approximately 30 percent Saudi nationals, 30 percent Filipino nationals, and 30 percent US, UK and Australian nationals. The transparent and structured sharing of project information ensures the team has a common goal with set tasks and milestones. Consistency in management delivery and decision making provides clarity and eliminates ambiguity. As a result, this diverse team provides an optimal service to Saudi Aramco.



Benchmarking

WorleyParsons *Improve* incorporates a systemized method for capturing small project performance data across various sites to assist customers in project portfolio delivery.

WorleyParsons recognized the opportunity to undertake small project performance reviews to capture front end loading (FEL) performance, key success factors and key performance indicators (KPI) metrics.

To meet this need, we have developed two assurance checklists for Project Development (Identify/Evaluate/Define phases) and Project Execution (Execute/Operate phases). The Project Development Checklist has been implemented on a number of *Improve* contracts, each customized to the individual customer's business needs.

This systemized method of capturing small project performance data for *Improve* sites enables:

- Internal and external comparisons of performance across a variety of contracts
- Overall assessment of the performance
- The provision of benchmarking reports and continuous improvement strategies
- Best practice project delivery
- On line real time access

With this methodology we are able to select the best aspects of each of our *Improve* contracts to determine which elements are fundamental to an ideal execution model. This ideal model can then be compared to existing *Improve* contracts to identify areas for optimization and improvement.

OneSteel

Australia

WorleyParsons' contract with OneSteel has delivered significant benefits since commencement in 2004. Cycle times have been reduced by 200 days, leading to an AUD 20 million increase in net present value. Capital spend has also increased 50 percent and resources employed have been reduced by 40 percent. There has been a significant increase in successful projects and in FY2005/2006 over 30 of the 38 completed projects met business needs.



BP Kwinana

Australia

WorleyParsons' contract with BP Kwinana in Western Australia has a history of project excellence with a current first quintile industry ranking. Recently, a significant improvement in 'micro project delivery' (projects typically less than AUD 300,000 in value) has been achieved. This improvement has represented a significant saving to the customer and has transformed an historic problem area for BP into an example of how to execute micro projects efficiently and cost effectively.





Capital Planning

WorleyParsons Improve works with our customers to improve and optimize their assets as part of the journey to operational excellence.

WorleyParsons understands the importance of capital works planning in maximizing our customers' operations. Systematic and rigorous planning through a capital works program ensures projects are correctly prioritized, and only the right projects proceed.

Recognizing the critical nature of front end planning as new projects arise, we assist our customers with front end and capital planning to attract and secure resources. This adds the most value and strengthens customer relationships. Key to this is forward projection planning where resource requirements are forecast on a rolling monthly basis, with at least a one year planning horizon.

Critical path activities, such as approval deadlines and baseline data availability requirements, are defined during early stages. Risks to the project scheduling and delivery are then identified. At times of limited staffing and subcontractor availability, planning during early stages identifies additional potential risks and actions to mitigate their effects.

WorleyParsons works with customers to develop and implement a capital planning process to deliver full expenditure of the annual capital plan on approved projects to achieve planned business objectives.

Early and joint front end project selection and capital planning prioritizes the portfolio of projects and presents business cases to ensure projects with the highest return on investment proceed. We then suggest changes to the capital plan to realize the full value and service potential of the capital works program. Once the capital plan is authorized we safely execute the approved projects on time and within budget.

Delivering Significant Improvements to our Customers

Australia

WorleyParsons has delivered significant improvements to OneSteel through our *Improve* contract. We have delivered to OneSteel:

- Safe designs and project delivery
- Improved capital planning, project selection, and execution
- Avoided AUD 35 million capital expenditure by spending an additional AUD 300,000 in operating expenses
- High return on investment – AUD 22.4 million Net Present Value was added for an AUD 5.03 million investment
- Easy access to best practice and benchmarking information
- Resource optimization – the same amount of work is done by 20 percent fewer people
- Reduced cycle time – delivering an equivalent AUD 20 million net present value



Focus on Cost Effective Implementation of Capital Projects

Canada

Since 1991, Talisman Energy Inc, through the Talisman Prime Relationship, has continuously engaged Colt WorleyParsons to provide engineering, procurement and construction management services for its oil and gas assets in Western Canada. The Prime Relationship's core business objective is sustained, cost effective and efficient execution of Talisman Energy's yearly North American capital project plan. The secondary objective is operational and maintenance engineering support. Cost effective implementation of capital projects is a key component for Talisman in reaching their return on investment goals. Major projects completed in recent years include: the Lynx/Palliser Sour Gas Gathering System; the Musreau Gas Plant expansion; and over 200 wells tied in annually.



Management Systems

Improve management systems are based on WorleyParsons' Project Management Process. The system is scalable, gated, and designed to interface with the customer's systems and business objectives.



The WorleyParsons Project Management Process (WPMP) is a systematic, scalable, stage gated process for supporting the development of a project's Execution Plan within a portfolio environment and is in use on all *Improve* contracts. A key function of the WPMP is to ensure projects receive a level of front end loading (FEL) commensurate with the level of risk (complexity), particularly during the early stages of development.

WorleyParsons' Enterprise Management System (EMSV3) is a global management system that is a repository for all processes and procedures used during Definition and Execution phases across all work packages. EMSV3 ensures all project team members work in a controlled and consistent manner, regardless of the activity or location.

InControl is the primary project control and cost reporting tool for *Improve* contracts. InControl has been proven on thousands of large and small projects worldwide. The system interfaces with other WorleyParsons' and customer systems.

A variety of scheduling tools are used to develop project schedules and the overall Contract Program for all phases. Functions include: logic-based networking; critical path analysis; resource scheduling; and import/export capabilities. Linked to InControl, these tools monitor and report cost and schedule status.

This suite of management systems provides security, accessibility, and real time access for our customers and other contributors through secure links. It can quickly and easily be customized to meet our varying customer needs.





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EcoNomics™ Delivering Profitable Sustainability

WorleyParsons *Improve* utilizes EcoNomics™ to identify and deliver more sustainable projects, helping our customers manage the risk and respond to their rapidly changing business environment.

EcoNomics™ is WorleyParsons specialized service offering for customers who are concerned about improving the overall sustainability and long-term profitability of their projects and operations, and fully embedding environmental, social and financial sustainability in the identification, selection and delivery of projects.

Project identification and selection integrates WorleyParsons' EcoNomics™ Assessment methodology, including our suite of proprietary assessment tools and our global network of leading engineering and technology capabilities. What is unique about this approach is the ability to monetize the value of all internal (project), external (environmental and social) and risk factors, allowing projects to be compared on a like for like dollar value basis. The external issues, which can now be included in this detailed economic model, include climate change and greenhouse gas emissions (price of carbon), water resource use and protection, loss of ecological diversity, social amenity and growth, and a whole range of other common resources. In addition, we are able to model future changes in resource costs such as energy and water to assess the affects on project decision making.

Following project selection, WorleyParsons is able to deliver practical engineering solutions by embedding sustainability in every part of the delivery process, from risk management and value improvement, through design and into construction management and operation and maintenance.

As it relates to *Improve* projects, EcoNomics™ enables our customers to enhance their business position by identifying new improvement projects and ensuring that all projects are structured to provide the best whole of business outcomes. Tangible business benefits include risk and liability reduction, improved environmental compliance outcomes, and enhanced ability to continue to operate and expand.

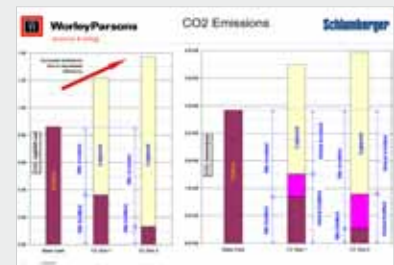
Project: Future Coal Initiative CCS Study

Australia

WorleyParsons was requested to conduct a carbon capture study on the technology options and varying capacity of a carbon capture retrofit to determine the most sustainable solution for reduction of carbon emissions.

The objective of this study was to assess technical and economic impact of retrofitting an existing Australian East Coast multi-unit coal-fired power plant with source to sink carbon capture and sequestration system. The study included evaluation of carbon capture alternatives, CO₂ transport system design, and sequestration system analysis (performed by Schlumberger Carbon services).

The project considered all phases, from flue gas capture, processing, dehydration, compression and transport, through to injection and sequestration. A tailored EcoNomics™ Assessment was a deliverable in the project.





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Our Vision

WorleyParsons will be the preferred global provider of technical, project and operational support services to our customers, using the distinctive WorleyParsons' culture to create value for them and prosperity for our people.

Leadership

- Committed, empowered and rewarded people
- EcoNomics™ – Delivering profitable sustainability
- Integrity in all aspects of business
- Energy and excitement
- Minimum bureaucracy

Agility

- Smallest assignment to world-scale developments
- Local capability with global leverage
- Responsive to customer preferences
- Optimum solutions customized to needs

Relationships

- Rapport with all stakeholders
- Open and respectful
- Collaborative approach to business

Performance

- Zero harm
- Results for our customers and other stakeholders
- World-class resources, capability and experience



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For further information about
our global capability email:
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