The Role of Independents in Wind Operations & Maintenance

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WorleyParsons is a leading professional services provider to the energy, resource, and complex process industries. Our services cover the full asset spectrum both in size and lifecycle – from the creation of new assets to services that sustain and enhance operating assets.

We operate in 41 countries across 165 offices.
Transfield Worley Power Services (TWPS) is a 50/50 joint venture of Transfield Services & WorleyParsons.

- Formed in 2004 to offer independent O&M services in the power generation sector
- Operates as a small business – low cost, close association with customer drivers
- Currently operates more than 3000MW of plant, all in Australia
- Small to large plants
- Technology neutral – includes coal, gas, renewables (wind, biomass, hydro), cogeneration
TWPS Wind O&M Services

Map of Recent Wind Farm Operations and Maintenance Locations

Key information and statistics

- Mixture of complete O&M services through to specific individual wind farm tasks
- Example clients include:
  - RATCH Australia
  - Pacific Hydro
  - Hydro Tasmania
  - Ergon
  - Eraring Energy
  - Suzlon
  - Infigen
- Safety record - LTIFR of 0.00 since 2007
- Currently includes long term contracts for complete wind farm asset management, operations and maintenance
The rise of ISPs in wind O&M

In the last 5 years there has been a dramatic rise in the role of independent service providers (ISPs) in wind farm operations and maintenance (O&M)

The US as an example;

- 25% of wind fleet expected ISP maintained in US by 2015
- ISPs are entering when turbines fall out of warranty or OEM contracts mature
- ISPs are of significant size and maturity, some cover multiple technologies (ie solar, gas etc)
- Increasingly sophisticated
- Similar thing has been occurring in gas turbine market

Wind O&M Market - Worldwide

- Wind O&M receiving more attention globally, is topical
- Wind O&M market roughly in the NZ$6-9B/year mark now
- Expected to roughly double in next 10 years
- Increasingly competitive;

“Wind Farm Operations and Maintenance Costs Plummet”

Average prices for operations and maintenance in the wind sector dropped 38% in the last four years, boosting the sector’s competitiveness significantly”

Source: Bloomberg New Energy Finance, Nov 2012
See: https://www.bnef.com/PressReleases/view/252

Wind Farm O&M Conference Calls for Papers

Source: ATKEPP, China, June 2012
New Zealand entering this “zone”

- Like Australia, NZ has small fleet size by world standards (combined about 1% of US fleet)
- Fairly typical age profile by mature market standards – is entering the ISP “zone”
- If assume 150MW/y growth can see fleet starting to age as %
- Increasingly the “value” proposition of ISPs to asset owners should be increasing in NZ
- **What is that proposition?**

At 2018 assuming 150MW/y

- 1 to 2 years: 43%
- 3 to 7 years: 23%
- >7 years: 34%

Based on NZWEA Web site
Basic wind O&M model

- Off/on site white collar
  - Contract administration
  - Energy/green trading
  - HSE auditing
  - Facility maintenance
  - System interaction

- On site blue collar
  - Spare parts provision
  - Specialist tools/equipment
  - Maintenance vehicles
  - Procedures/practices
  - Site HSE

- BOP scheduled, unscheduled maintenance
- Turbine scheduled, unscheduled maintenance
- Asset management
Typical O&M contracting model

O&M contract - Availability/energy, safety, environment KPI based (can include incentives to increase production and fix costs)

Pros

- OEMs know their turbines best
- Financier’s preference – comfort
- Clear warranty path
- Access to original spare parts
- Software and hardware upgrades
- Purpose designed SCADA
- Purpose designed condition monitoring

Tends to favour earlier years of operation

Cons

- Distant to broader industry innovation
- Wind specific – no portfolio integration
- Generally lower efficiency
- Limited competition in spare parts
- Beholden to one supplier
- Proprietary systems/platforms
- No clear driver to ↓ costs

Tends to clash with later years of operation
O&M Cost Models

Facility costs – administration, site maintenance, tools & vehicles
Turbine costs – labour, spare parts, consumables

- Historically turbine O&M costs rise with time
- Particularly rapid rise after about 7 years
- This “back end” are where ISPs appear to be effective in lowering costs

But ISP value proposition can be extended to target both costs and revenues

It’s all about the EBIT!

Increasing revenue?
- Improving price of energy (trading)
- Improving turbine availability
- Improving energy yield

Decreasing costs?
- Lower labour rates
- Innovation in O&M practices from broader industry
- Supply competition – spares & platforms
- Efficiency through portfolio(s)
- Consolidation across technologies

Asset performance

Wind farm asset

ASSET EBIT
↓ Costs
↑ Revenues
Decreasing costs – the role of ISPs

1. Third party spare parts supply (increasing competition)
2. Innovation, particularly from the broader O&M sector/industries
3. Spreading O&M costs across multiple projects and technologies (including technology portfolios)
4. Opening up platforms and systems to generics
5. Giving the asset owner more visibility and control over O&M decision making
6. Benchmarking against different projects and technologies – discovering the art of the possible and applying
7. Different health, safety, environment and both IR and HR management systems/techniques

Wind farm asset

Present ISP value proposition to asset owners

Value only just emerging on the market from ISPs
Increasing revenue – the role of ISPs

Wind farm asset

Optimising output across a portfolio of projects

Increasing availability

Increasing energy yield?

Energy based KPIs

Greater output scrutiny

Condition monitoring

Asset work-order optimisation

Asset work-order optimisation against wind resource, owner portfolio and even market

Decreasing costs

Lifecycle optimisation across portfolio

Trading – energy & green value

Present ISP value proposition to asset owners

Value only just emerging on the market from ISPs

Broader industry knowledge

Plant benchmarking
Maximising potential from ISPs

ASSET PORTFOLIO

- Wind
- Solar
- Hydro
- Biomass
- Cogeneration
- Others (?)

ISP O&M PROVIDER

- Asset management
- Engineering
- Portfolio output forecasting
- Compliance
- Benchmarking
- Asset planning help

ASSET OWNER

Energy green trading

Lifecycle optimisation across portfolio(s)

Smart energy?
Thank you