

CurrentAffairs

News and views from Ergo Consulting Ltd

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Energy storage – a game changer?



Change is constant and new technologies are coming to market every day. At Ergo we aim to stay abreast of technological developments so Senior Engineer Raj Chand and I attended the Australian Energy Storage conference in Sydney in June.

Battery research and manufacturing is hotting up as rivals compete for the potentially lucrative prize of efficient and economic energy storage. Tesla are among those setting the pace; they are now selling Lithium batteries for \$300USD/kWh. This is half the cost of most competing technologies and starts to make a compelling case.



Load profile kWh for one of Ergo's staff with 2 young children

The significance of energy storage goes hand in hand with photo voltaic (PV) cells or solar panels, which are capable of providing between 1-2kW per house while the sun is shining. Most domestic installations are for 3kW systems; and most utilities plan

on about 3kW per house (24kwh/day) as a diversified load on a 1MW distribution transformer.

Across a neighbourhood of 1,000 houses (the size of some new housing projects in Auckland), different lifestyles mean that not everyone is using power at the same time. So we may need considerably less than 24kWh/day per house. In summer, a 3kW domestic solar array can generate

more than 20kWh/day. But on average solar panels probably provide 1/3rd of the 24kWh/day needed for each house. With energy stored in batteries, which are becoming more cost-effective by the day, and considering a community of 1,000 houses all fitted with solar power, it's foreseeable that solar could generate half, perhaps even 2/3rd of average daily demand, especially in sunny climates.

For a neighbourhood development, I can conceive solar, wind turbines and a diesel generator (backup only) providing enough power with 1MWh of batteries smoothing the peaks. Allied to the ongoing developments in connectivity (UFB etc) and continuing urban traffic congestion, this could support further changes in lifestyle and have significant implications for utility networks. For example, as people choose to work more from home – or better still, from drop-in commercial office hubs in their neighbourhood – existing programmes for maintenance and investment in power networks, as well as plans for major investment in public transport, may have to be rethought.

Chris Turney
Director - Power Systems

Alberto Sepnio



Alberto joined Ergo's Control Systems team in April 2015 as a CAD designer. Alberto's role is to facilitate, co-ordinate and manage the design drawings of the Control Systems' team. He is uniquely placed to do this, being both proficient in AutoCAD and having an electrical engineering degree. Since moving to New Zealand in 2007 he

has worked primarily as a CAD designer. Outside of work, Alberto has two sons, and a keen interest in Basketball, both coaching and playing.

Ergo News



Richie Murray (Control Systems) and wife Stacey had their first child, Thomas, in January.



Jonathan Cuff (Control Systems) proposed to Yi Huang, his partner of three years. A tentative date is set for April 2016.

Ergo's Intrepid Travellers

Power Systems' Technical Specialist Richard Charles travelled to China in June to participate in the Gobi March, a 7 day, 250km foot race across the Gobi desert. Richard is no stranger to extreme events, having completed several marathons and Ultra marathons, alongside Ironman New Zealand, Coast to Coast, and the Northburn 100. The Gobi March presented extreme conditions from snow through to severe sandstorms which eventually led to the cancellation of the final race leg and temperatures varying from below zero to over 40 degrees. Competitors had to carry their seven days' worth of supplies (food, sleeping equipment, toiletries); Richard finished 34th out of 146 finishers from around the world with a cumulative event time of 37 hours and 56 minutes.



Richard Charles crossing the Gobi Desert.



Richard Charles crosses the Gobi Desert in extreme conditions.

Power Systems' Junior Engineer David Fraser has taken a five month sabbatical to Rock-Climb his way through South America. David joined a group of climbers who travelled through Argentina, Chile, Bolivia and Peru on an overland truck, sleeping in a tent and having limited facilities for the duration of his travel. During his expedition, David also completed the Inca Trail to Machu Picchu.



David rock climbing in Argentina.



David Fraser (right) completing the Inca Trail.

Ergo appoints Alistair Williams as Team Leader, Power Systems



Ergo has appointed Alistair Williams to lead its Power Systems team. Alistair is a chartered electrical engineer with over 20 years' experience in the power transmission and distribution sector in New Zealand, Australia and the UK. Previous to Ergo, Alistair was Client Relationship Manager with Jacobs; he has spent most of the last ten years with Sinclair Knight Merz (now

Jacobs), leading projects and business development with well-known utility providers. His early career was with Alstom and subsequently Areva, the global power contractors and equipment

suppliers, where he managed both tendering and project delivery teams.

Commenting on the appointment, Chris Turney, Director of Power Systems and founder of Ergo said "We are delighted to have Alistair joining us. As we take the next step in Ergo's development, we wanted an experienced manager who could share the load in leading and managing the company. Alistair has an excellent reputation in the power sector in New Zealand and is a great fit for the way we do things at Ergo. His arrival allows me and our other senior staff to concentrate on what we love doing most – delivering top quality engineering design and building great client relationships."