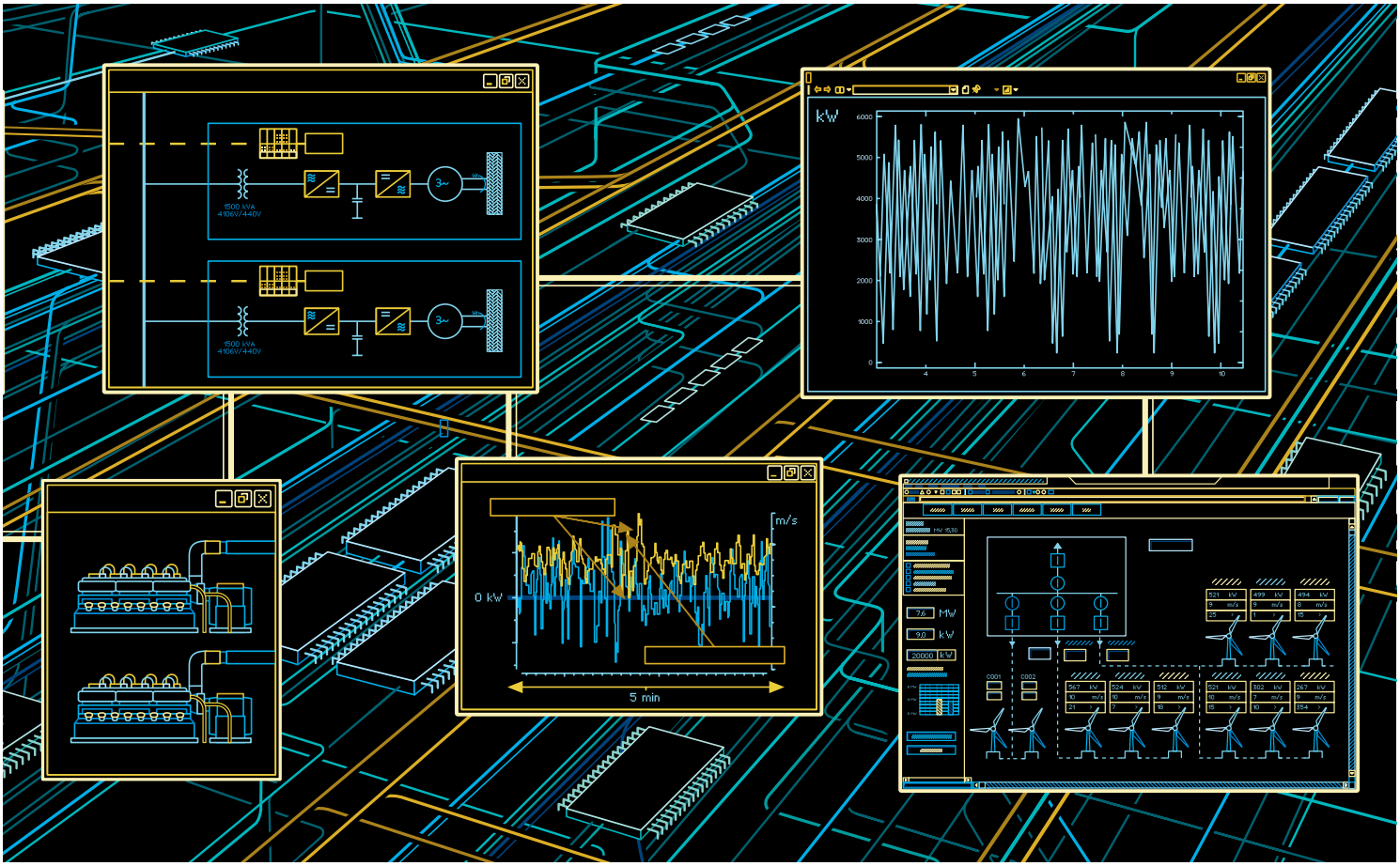
source

2|13
The customer magazine
of the ABB Group
New Zealand



Minimising disruption

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Farewell to Grant, and introducing our new MD

Power and productivity
for a better world™

source 2|13

Grant Gillard
Managing Director
ABB Limited

Dear colleagues,
This edition of source marks my last as Managing Director for ABB in New Zealand. After 28 years with the company I have decided to retire at the end of 2013 and start a different adventure.

It seems not so long ago that I was a new engineering graduate turning up for work at the Post Office (now Telecom) in Hamilton, but in truth, the world now is a very different place. Improvements in communications and logistics – enabled by underlying digital technologies - have made the world much smaller and faster.

Globalisation brings a range of threats and opportunities, and in many cases we have focused on the threats rather than exploiting the opportunities. I wonder if we have been too insular in our thinking – not quick enough to realise how these changes that have decimated some New Zealand businesses can also provide new opportunities – but we have to be smart and quick.

Historically our nation's wealth has been based on the competitive advantage provided by New Zealand weather. Our climate is very conducive to the production of grass, which we have converted to wool, meat and milk. We now need to move from a grass based economy to a knowledge based economy, and I suggest to you that this is not such an easy thing to achieve. Whilst the government might encourage us all in that direction with the help of schools and universities, it is the research and development undertaken by the private sector which will create the needed knowledge.

Our power electronics business in Napier is a good example of how we can punch above our weight by creating new knowledge and innovative products, and then sell this expertise to a worldwide market. Their technology is helping international (and national as you will see in the magazine) customers minimise power disruption to their processes and their customers, which is the theme of this edition.

In closing I feel confident that my successor Ewan Morris has inherited a great team and I am sure you will all make him feel welcome when he commences in New Zealand in March 2014.

To those I have worked with closely over the years, thank you and best wishes.

Kind regards
Grant

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Minimising disruption

Annual Electricity Survey

Leadership change

Stories in short

01

Powering one of our popular tourist attractions

Passengers on Wellington's iconic cable car are now treated to a smooth, uninterrupted ride courtesy of ABB's power protection technology, made locally in Napier.

Photo: Blue Polaris

02

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To improve the power quality for the electrical drive system that powers the cable cars in New Zealand's capital city, ABB supplied a 100 kVAr PCS100 Reactive Power Conditioner (RPC).

This project achieved many unique milestones. It was the first PCS100 RPC installed in New Zealand, the first for the public transport industry globally and the smallest footprint PCS100 product ever built.

In 2012, Wellington's iconic cable cars celebrated 110 years of service to the city. The funicular railway is a favorite of locals and visitors alike, allowing easy access to the top entrance of the Botanic Garden and the Kelburn lookout, from the main shopping street at Lambton Quay in the central business district. The track climbs 120 metres above the city and carries almost a million passengers a year. The cars run every 10 minutes stopping at three intermediate stations as well as the terminals, which allow easy access for residents from the elevated suburbs to the city centre and for students to access the Kelburn campus of Victoria University at the Salamanca station.

The cable cars are driven by a DC drive, which has been producing notching and harmonic disturbances on the electrical distribution network, creating a poor power factor. Now with ABB's PCS100 RPC employed, the power factor is corrected and the low order harmonics have been mitigated. Gavin MacIntyre, the maintenance manager at Wellington Cable Cars Ltd., said that the RPC would help improve Wellington's cable car performance, adding that "the RPC will ensure power factor grid compliance and dampen the harmonics, which can disrupt the cable cars' positioning system and relays."

An economical solution

The PCS100 RPC has a unique modular design, which in addition to providing high reliability, also lowers maintenance costs and prevents penalties due to power-power factor or harmonics.

Gavin MacIntyre also highlighted the importance of grid compliance and explained how it was a specific business driver for the project. "Several times a journey, the cable car regenerates returning power to the grid, so grid compliance is very important to us," he explained.

Gavin verified that a capacitor-based solution would not have been financially viable and explained why for economic reasons, Wellington Cable Cars Ltd. had chosen ABB's RPC. "We looked at a capacitor-based solution," he said. "But with the specific usage we have, we would have to replace capacitors so often, that it would rapidly become financially nonviable."

01 The cable car overlooking Wellington City.
02 The main cable car entrance.
03 Commissioning the PCS100 RPC.

Deloitte Energy Awards – ABB's Young Energy Executive of the Year award recipient

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ABB was proud to have sponsored the Young Energy Executive of the Year award at the annual Deloitte Energy Awards held in August.

Over 630 guests attended the black-tie event which was held to recognise achievement and excellence in the New Zealand energy sector.

Karen Frew, Asset management maturity manager at Powerco, won the Young Energy Executive of the Year award sponsored by ABB.

Karen commented after her win:
"I would also like to thank Grant and ABB as the sponsor of the award. I listened to Grant's speech at the EEA conference this year and found him very thought provoking and their sponsorship of the young executive category seems a good fit with the questions he put to the audience on how to get more young people into the industry."

Congratulations also to Contact Energy who won both the Energy Project of the Year and the Environmental Excellence Award for its Wairakei Bioreactor Project. ABB was proud to have been a part of this project by providing variable speed drives to control the speed variation of the pumps and minimise harmonic distortion. ABB also supplied an 800xA automation system to control and monitor the overall bioreactor process.

01 Karen and Grant following the presentation of the award.
02 Cooling water from the power station flowing into the bioreactor facility on Contact Energy's Wairakei site.

ABB's Napier technology helps Sinterama connect European factory equipment to the Mexico power grid

01

02

01 The market for polyester in automotive interiors is continuing to grow due to its superior resistance to pilling, abrasion, and fading from sunlight.
02 ABB's PCS100 1250 kVA Static Frequency Converter installed at Sinterama.

Sinterama, a leading European polyester thread and yarn manufacturer, relocated part of its production from Italy to a new facility in Mexico. ABB has installed a turnkey solution based on its PCS100 static frequency converter that allowed Sinterama to connect its equipment, which operates on a European standard 50 Hz power supply, to Mexico's 60 Hz grid.

Sinterama's ambition is to serve growth in the Mexican and US automotive markets, which together produce around 18.5 percent of the world's cars. The new factory will produce some 3,500 tons of yarn each year, which are used in a variety of car interior coverings and trims.

Sinterama wanted to use equipment from its Italy plant in the new facility, but needed to avoid the costly downtime of modifying or upgrading the equipment to adapt to the Mexican power grid. ABB's PCS100 technology, developed in Napier, New Zealand was able to convert the supply voltage and match load requirements while ensuring a reliable power supply.

The solution will also lower Sinterama's total cost of ownership by ensuring high reliability and maximum availability, for example keeping the equipment running through voltage sags and frequency variations. This can help reduce operating and maintenance costs in addition to unplanned downtime.

This same solution has been successfully deployed in a Sinterama facility in Brazil, increasing their confidence that the technology would perform equally in Mexico.

Managing Director of Sinterama De Mexico, Huseyin Nail Kavrak, highlighted the reason ABB's PCS100 SFC was selected over alternative solutions, "ABB offered a better designed product and a favourable delivery time frame. This enabled Sinterama to achieve its goal of no downtime of equipment adapting to a 60 Hz grid."


TOYOTA
SKYY
NESPRESSO
NEW ZEALAND
CAMPER
NESPRESSO

Napier technology helps power Emirates Team New Zealand's America's Cup base

Although the outcome of the racing didn't go to plan, here at ABB we were proud of the team and were proud to be an official supplier, helping power the team base in San Francisco during the event with our locally developed PCS100 Static Frequency Converter (SFC).

In previous years, the Emirates Team New Zealand base was constructed using new and existing 40-foot containers and canvas tents wired in New Zealand. This year a new, more economical solution was installed, which made it easier to convert the supplied voltage of 480 V at 60 Hz frequency from the San Francisco grid to the voltage and frequency required for the New Zealand based equipment (at 400 V and 50 Hz). Thanks to ABB's technology, this could be achieved using a 250 kVA PCS100 SFC. The SFC is compact and highly efficient at 95% efficiency, resulting in minimal losses during conversion. ETNZ's base housed 80 employees and their electrical equipment, together with a hospitality area (the Waka which was the large mobile hospitality venue used for the Rugby World Cup 2011 on the Auckland waterfront).

ABB employees based near the Cup had the opportunity, along with a few customers, to be given a guided tour of the team base.

"It was the only available, cost effective and highly reliable solution," said Sean Nelson, Project Manager from electrical contractors Bishman, when asked about the advantages of the SFC with regards to operational costs and delivery time to San Francisco.

One of the unique features critical to the reliability of the converted output supply is the built-in redundancy capability, which is an intrinsic feature of its modular design. In the unlikely event of a fault in the rectifier or inverter modules, the master controller overseeing the power modules will provide a warning notification, but will crucially allow the system to continue operation until maintenance can be scheduled. With a campaign budget of over $100 million, it was essential that the PCS100 SFC operated reliably 24/7 at its foreign base.

Tough enough for the elements at McKee Substation

ABB's disconnecting circuit breakers are helping Transpower minimise maintenance and increase safety for their maintenance team at their McKee Substation in Taranaki.

Transpower's requirements

One of the key criteria for Transpower when planning for new high voltage substations is to minimise maintenance. The vast majority of the substations are close to the sea and exposed to wind-borne salt, which promotes corrosion in open air contacts used in disconnectors and increases the need for repair and maintenance.

ABB's solution places the disconnector within the chamber, ensuring it doesn't come into contact with environmental elements. This results in less corrosion and reduces the need for on-going maintenance on the disconnector over the lifecycle of the disconnecting circuit breaker. Earthing is also able to be applied remotely from the control room.

Andrew Renton, Transpower's Pre-approval Engineering Manager, comments that creating savings in on-going maintenance costs was a key driver for Transpower. "We are always looking for better ways to reduce operational costs and improve circuit availability. We do this by looking at the entire site and identifying areas that cause us extra cost or take the circuit out of service. We are also really interested in the materials and techniques used by the suppliers to deal with corrosion in our environment".

Disconnectors are a key area; a DCB without an open air disconnector is technology that works really well. The cost advantages of using the DCB saves an equivalent of one disconnector based on the upfront cost, as well as savings in on-going maintenance costson the lifecycle of the product.

Energy News and ABB Annual Electricity Survey 2013

Now in its second year, ABB and Energy News once again sponsored the Annual New Zealand Electricity Survey to gauge the opinions of industry leaders on current issues facing the country and solutions to address them.

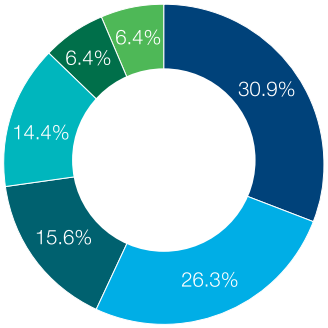
Respondents answered 18 questions that covered various topics and feedback from last year's survey, including affordability of electricity, change in demand outlook, competition, lines company regulation, and experience of the 2012 dry year.

Industry consultant John Hancock remained as chair of the advisory panel that developed the survey questions. Among the nine panel members that lent their knowledge and expertise were Fraser Clark of the Electricity Authority, Brian Fitzgerald, Simon Coates of Concept Consulting, Grant Gillard of ABB, Matt Ritchie and Margaret McCrone of Freeman Media, Nicholas Robinson of Contact Energy, and David Thomas of Vector.

The survey closed in April, having run for four weeks and having been completed by 330 respondents from across the sector, primarily from the consulting, professional services, gentailer (generation retailer) and distribution areas.

Question 1

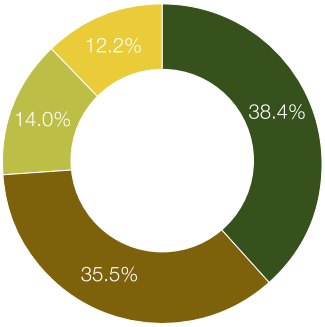
While certainly not an exhaustive list, which of the following do you think are the most significant issues facing the New Zealand electricity sector in 2013? Please rank your choices one through six, with one being the most significant:



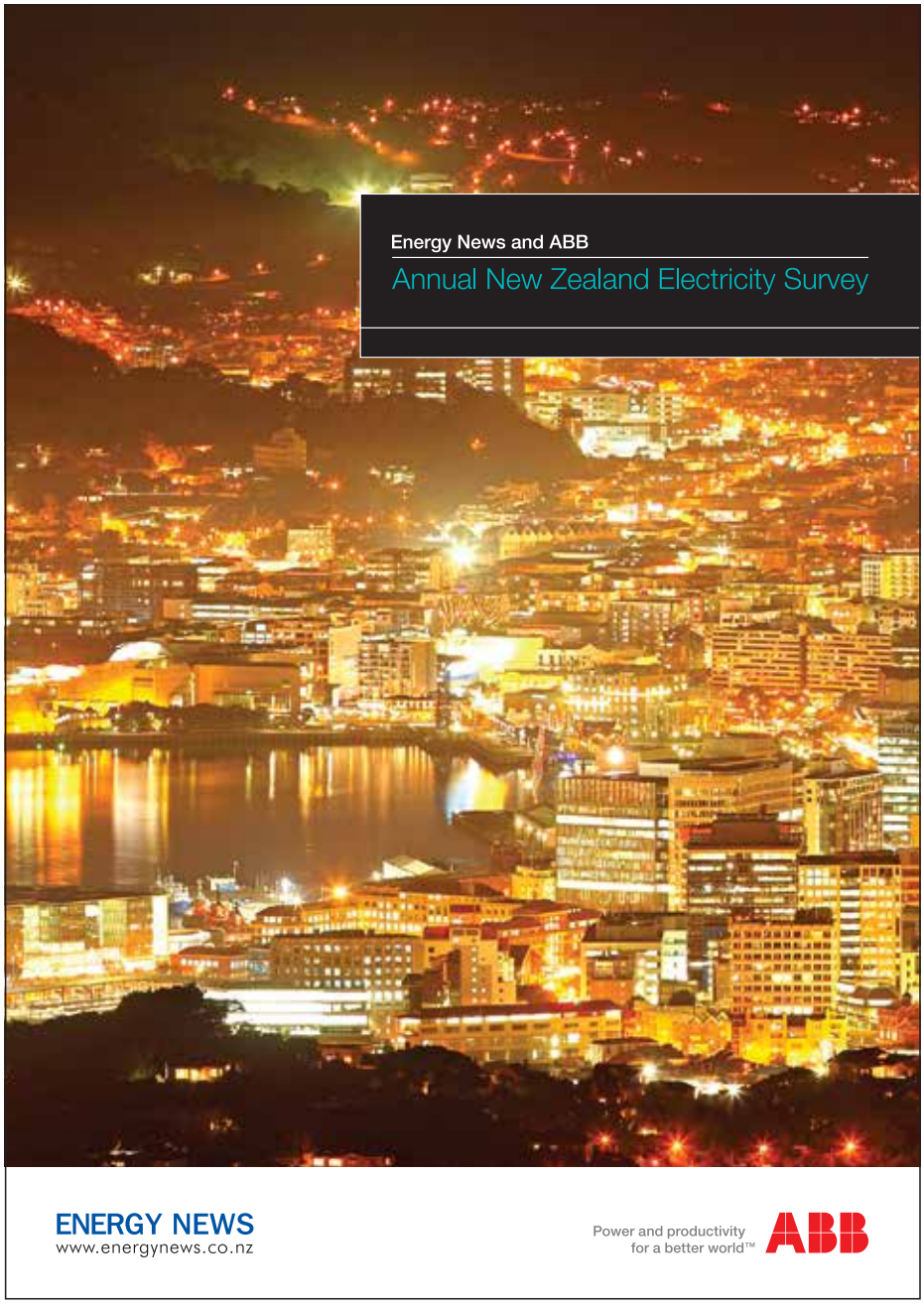
1. The flat demand outlook and the implications for retail competition and asset utilisation – 30.9%
2. Regulation (whether in the form of supposed over-regulation, not enough regulation in specific areas, or what you think to be incorrect regulation of specific areas) – 26.3%
3. The impact of the partial privatisation of one or more state-owned enterprises – 15.6%
4. Lack of competition – 14.4%
5 =. Improving stakeholder and public engagement – 6.4%
5 =. Increasing energy poverty and the resulting risk of political intervention – 6.4%

Question 2

Which of the following do you think are the best new opportunities for New Zealand electricity companies in the near term? Again keep in mind this is not an exhaustive list and rank your choices one through four, with one being the best opportunity:



1. Exploring and adopting new technologies – 38.4%
2. Driving energy efficiency in the industrial, commercial and residential sectors – 35.5%
3. Product and market diversification – 14.0%
4. Expansion into international markets (in terms of export of intellectual property or New Zealand-made products, or the investment in offshore electricity initiatives) – 12.2%



Results available online

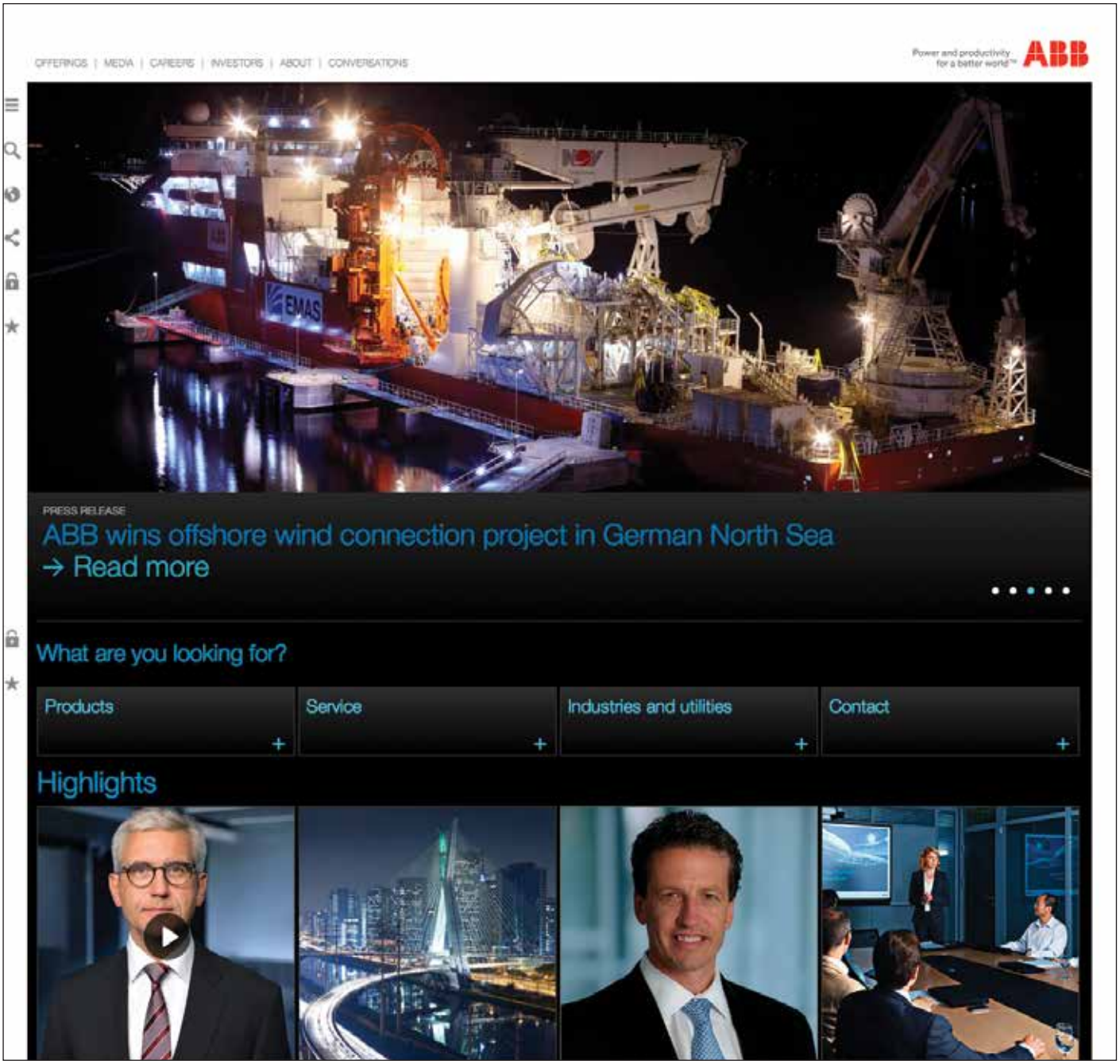
The survey report is available for download from www.abb.co.nz or contact nz.communications@nz.abb.com for an electronic copy of the 2013 or 2012 results.

About Energy News

Energy News is New Zealand's online news and information service for the energy sector.

The website (www.energynews.co.nz) was launched in 2008 and now boasts over 5000 readers every month from 240+ subscribing organisations. Its readership consists of New Zealand energy sector organisations and services companies spanning the electricity, oil and gas, petroleum and alternative energy value chain. The subscription-based site provides executive interviews, news, opinions and commentary on a daily basis.

Improving customer interaction through the new ABB website



Have you visited abb.com recently? If you have, you would have noticed the website's fresh "look and feel". Using ABB's new tiled web branding concept, significant changes were made as part of the biggest refresh of our web presence in many years. The new web design is intended to allow for richer content and interaction, and full responsiveness for mobile devices and tablets to provide a better user experience.

What comes next?

The front section web migration is a first step towards ABB's complete website refresh which will see every page of ABB web updated to the more modern design. Implementation of new Products & Services page layouts and navigation, initially starting with two pilot businesses (Measurement Products and Robotics) and eventually covering all of ABB's products, is scheduled until the middle of 2014.

ABB.co.nz

ABB's New Zealand website will be live in the new design by the end of 2014.

Have any questions or feedback? Please feel free to ask ABB's New Zealand's Corporate Communications team nz.communications@nz.abb.com

“Know when to STOP” – ABB’s annual OHS week

In October ABB’s South Asia region (which includes ABB in New Zealand) collaborated for its first ever region-wide safety week.

In addition to an awareness programme around specific OHS areas, including sprains/strains, lacerations, and burns and fractures, ABB in New Zealand hosted a range of activities including making a personal commitment to safety through pledge safety boards at all 14 sites, OHS excellence awards, and St John first aid demonstrations. In recognition of St John’s worthy efforts in our community, ABB donated $5,000 to the organisation as part of the week.

“Know when to STOP” was chosen as the theme for this year’s regional OHS Week, which highlights that everyone has an important responsibility for building a healthy and safe environment.

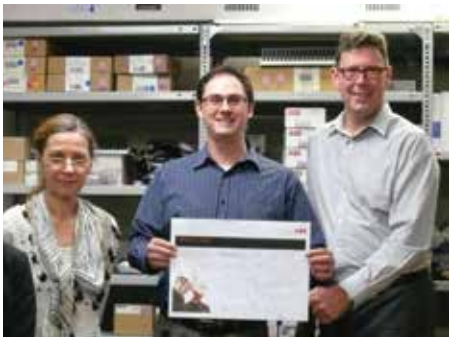


ABB takes part in Futureintech

As a part of an IPENZ initiative called “Futureintech”, two of ABB’s engineers from its Napier R&D team have been visiting local schools as ambassadors. Through the program, technologists, engineers and scientists from various companies provide school children and young adults exposure to the uses of technology in industry. Activities during school visits range from class room presentations to meeting small hobbyist groups.

Futureintech is a country wide program, with ambassadors from all fields of science, technology and engineering participating. The program also includes visits to industrial and professional worksites, allowing the students to obtain real world exposure to the ambassadors’ careers and workplaces.

ABB ambassadors Fabian Keller and Tom Pryde, visiting Hastings Intermediate’s Robotics Club members composed of 12 year 7 and 8 students

Farewell Grant

At the end of this year we sadly farewell our Managing Director, Grant Gillard, who has given 28 years loyal service to the company.

From his early days in ABB restructuring and developing the switchgear business in Henderson, Grant soon found himself in the role of managing ABB's operations in New Zealand, and is one of the company's longest-serving country managers.

When questioned on his retirement plans, family-focused Grant assured us that with five (nearly six) grandchildren under 5, his retirement will by no means be sedate!

Source magazine held a short interview with Grant to capture his final thoughts at ABB.

Source: How would you like people to remember your time at ABB?

Grant: I hope people will remember ABB during my time as a decent company. By that I mean that I hope our customers always felt that we dealt with them in a straight-forward way - we delivered what we said we would (although sometimes not without hiccoughs), and although we had formal contracts in place, I hope they also had the feeling that a deal on a handshake would have sufficed.

I also wanted to create a work environment where employees could enjoy their work and achieve their goals. I wanted employees to feel they could do an honest day's work for a fair day's pay, with the tools needed to do the job, and without the problems of oppressive management of debilitating office politics. It also meant that we could develop and retain good people, and I am very proud of the team that I leave behind. Perhaps they will tell their friends that ABB is a decent place to work.

Of course the shareholders also wanted a decent return on their investment in New Zealand, and thanks to the efforts of all the staff, our shareholders have all done rather well.

Source: Any particularly memorable moments at ABB?

Grant: There are many, but a helicopter trip in my early days to one of the most beautiful parts of our country still sticks in my mind. I recall we were looking to provide a rack railway system to a sky resort, but unfortunately the slopes were closed to the public because the access roads were blocked by a dump of new powder snow. So we did a reconnaissance of the site by helicopter instead, and I was deeply impressed by the incredible beauty of the New Zealand alpine landscape.

Source: Significant changes you have seen in past 30 years?

Grant: One of the biggest changes I have seen in my tenure is the consolidation of both our competitor and our customer base. Globalisation, which has gone hand-in-hand with the development of very efficient global logistics, has presented a number of challenges as well as opportunities for businesses in New Zealand. We have seen a large number of small companies bought by the larger ones, who in turn have been acquired by the global giants.

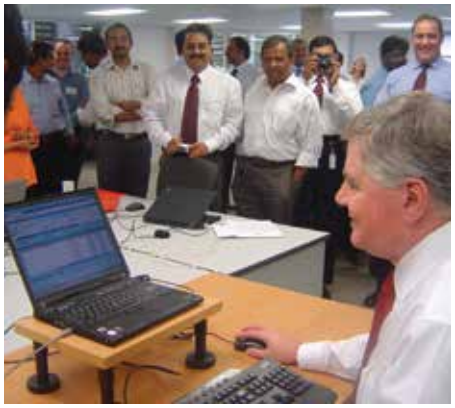
As a nation we have experienced much of the down-side of this change as manufacturing has been moved off-shore, but we should also realise that the change has also presented an opportunity.

Nearly half of ABB's revenues in New Zealand is derived from exports. While we have been forced to close down some manufacturing here in areas where we could not compete internationally, we have also managed to grow very successful export businesses which provide stimulating employment opportunities at home and a steady profit steam back to our shareholders.

I would encourage other New Zealand businesses to put more effort into research and development. Knowledge is one of the few things you can sell more than once. Strive to find elegant solutions to the hard problems – those solutions are the ones

that can provide the basis for a profitable and durable business.

From the team at ABB in New Zealand we will miss you Grant, and wish you a wonderful retirement.



We are pleased to announce that Ewan Morris has been appointed as Managing Director and Country Manager of ABB in New Zealand, effective March 1, 2014.

Ewan joined ABB in 1988 as an electrical engineer and has had a long and extensive career in the company across New Zealand, Sweden, Australia, Malaysia and Switzerland.

He is currently Global Marketing and Sales Manager for ABB's Power Conversion business and will relocate from Switzerland to New Zealand.

He holds a Bachelor of Engineering (Honours) degree from the University of Auckland and an MBA from Murdoch University in Australia.

A detailed interview with Ewan will be included in the April 2014 edition of Source.

Ken Mulcock, currently Country CFO, will be acting Country Manager during the two-month transition period.

Fostering talent – ABB's regional graduate engineering progamme

In 2014 ABB will be welcoming five fresh faces into the team as part of a new Graduate Engineering Programme.

The program is part of ABB's South Asia (SAS) regional initiative to meet our present and future engineering talent need; helping us find the next generation of leaders and facilitate long term succession planning. The graduate programme runs for 18 months and will allow insight into three different areas of business within ABB. The rotations are for six months each, and include an international posting within the South Asia region.

The engineering programme will be managed in addition to other graduates in ABB who are employed independently of the programme, in engineering and non-engineering roles, and other apprentice programmes running in ABB.

ABB's Maz Suleiman demonstrating ABB's technology at the University of Auckland Engineering Careers Fair in May.

Service centre opens to MESNZ

ABB's Hamilton service centre recently hosted members of the Maintenance Engineering Society of New Zealand (MESNZ) in an after-hours networking event, as part of the society's regional network evening series.

ABB's team took members of MESNZ through the transformer and rotating machine overhaul facility, the 10-ton dynamic balancing rig and the specialised high voltage coil manufacture plant.

The Maintenance Engineering Society is active across New Zealand, providing opportunities for maintenance engineers and manufacturing operations to network and share innovations and experiences; both at a national level at their annual national conference or at these regional events.

Craig Landon presenting to the visitors in ABB's coil centre.

Life with an ASEA legend

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In May this year a new office and factory building was opened in Ludvika, Sweden, by ABB. The building, Uno Lamm HVDC (High Voltage Direct Current) Center, was named after Uno Lamm, otherwise known as "The Father of High Voltage Direct Current" power transmission, who worked for ASEA which was merged with Brown Bovery in 1987 to create ABB.

Uno Lamm's widow, Pamela, lives in St Mary's Bay, Auckland, and at 92 years young, has lived a rich life as covered in her biography (published under her maiden name Pamela Morris) called *I've Had My Dance*.

Pamela was a war widow when she met Uno on a train from Copenhagen to her native England in 1947 and two and half years later they married. With the marriage came Uno's three teenage children, in addition to her own daughter, and a move to Sweden.

ASEA completed a HVDC Cable to Gotland in 1955 which became the first modern fully commercial HVDC system. Uno became Consultant to the President of ASEA and a Fellow of IEEE and the 1965 recipient of the Benjamin Lamme Medal.

Uno Lamm obtained his Ph.D from the Royal Institute in Stockholm. During his career he obtained 150 patents and wrote around 80 technical papers.

Pamela's own background as the daughter of a military family took her to India, Egypt and Turkey. As a young girl she trained as a professional ballet dancer but her war services intervened.

Life in Ludvika with Uno was a full one. Uno's position within ASEA and notoriety as an inventor meant he had many international contacts and visitors, who all needed to be entertained at home due to the lack of restaurants in Ludvika. Pamela had to quickly adapt to hosting large formal dinner parties and the Swedish etiquette, which was quite different and rigorous, particularly in those days. Efforts to learn Swedish were made all the more challenging by everybody's desire to put into practice their English skills during many an evening spent entertaining.

Pamela attributes Uno's success to his focused academic mind and his tenacity when faced with obstacles and adversity - taking him through challenges to reach new and unexplored territory.

ABB would like to thank James Clague, President of the New Zealand Scandinavia Business Association Inc for putting ABB in touch with Pamela, and for allowing us to use the above words from their publication "Inspire" in our magazine.

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01 The recently inaugurated Uno Lamm HVDC Centre in Sweden. Pamela's stepdaughter in Sweden, Anita Lamm of Televinken fame (Swedish children's program), attended the inauguration in her father's name.
02 Uno and Pamela (right) in the Gotland Control Centre – home of the world's first HVDC link.
03 James Clague (President of the New Zealand Scandinavia Business Assn. Inc), Grant Gillard (Managing Director, ABB Limited, New Zealand) and Pamela.
04 New Zealand Scandinavia Business Assn logo.

Take irrigation system operation to the next level?

Naturally.

A typical irrigation system is a complex network of water transfer pipes and channels, pumping stations, reservoirs and filter stations down to distribution pipes and irrigation points. Using ABB's integrated approach, you can handle all this in real time and turn field data into valuable information for more timely and informed decision making. ABB's smart approach allows you to take irrigation system operation to the next level, improving performances and defining maintenance strategies, while keeping all the parameters such as flow, pressure, level, water quality and energy consumption under control. Our complete range of electrical products and solutions contributes to a more efficient, productive and reliable operation. **www.abb.com/water**

Power and productivity
for a better world™

ABB