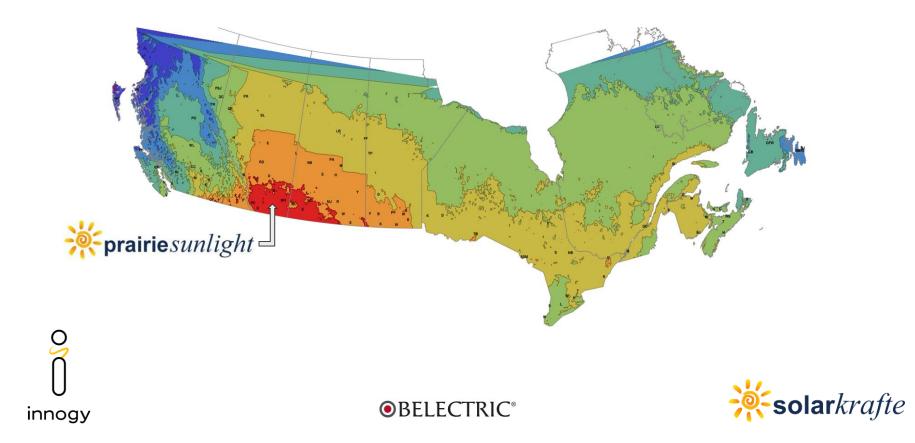
Solar Krafte, Belectric and innogy formed an integrated team to build utility-scale, ground-mount, solar PV systems in southern Alberta, the most solar intense region in Canada.





Solar Krafte participated in the inception of the non-subsidized utility-scale, solar power market in California, and helped to shape its development from the beginning. Boasting the most intense solar resource in Canada, southern Alberta and Saskatchewan offers a parallel to the California market, and in 2015 Solar Krafte began development work there.

Through technological advances, and substantial global manufacturing supply increases, the cost to build a commercial scale solar power plant has dropped dramatically over the past few years. What cost us \$100 million to build seven years ago, we can build for \$25 million today.

In much of North America, we can now generate 100% clean, renewable electricity using only sunshine, at the same cost and without subsidies, as new electricity generated by burning fossil fuels. The key is scale. By combining scale with the prairies' intense solar resource, we can produce the most competitive power possible, without emissions or waste.

#### Alberta

Capitalizing on Alberta's deregulated energy market, and the Alberta government's mandate to eliminate coal-fired power by 2030, Solar Krafte was an early market entrant into the Alberta renewables power market in the southernmost Alberta communities of Spring Coulee, Raymond, Stirling, Warner, Wrentham, Taber, Vauxhall, Enchant, and Brooks.

Solar Krafte is committed to demonstrating honesty and transparency in all of our business activities. We place the highest value on the relationships we have with our landowners, vendors, investors and utility partners, believing that our success depends on true, hands-on partnerships defined by mutual respect, committed support and integrity.







**●**BELECTRIC<sup>®</sup>



## *Prairie Sunlight* at a Glance









## **Overview of Phase 1 of the** *Prairie Sunlight* **Solar Build-out**

#### Phase 1: 256 MW<sub>ac</sub> Distribution Grid Projects

Phase 1: 567 GWh - 1st Year Energy Production

- 8 smaller utility-scale, distributed generation, solar farms in the highest solar resource region of Alberta
- Over 115,000 tons of Carbon Dioxide Emissions avoided every year
- Constructed entirely by local skilled workers
- Over \$400 million invested into the Alberta Economy during construction with extensive, long term sustainable property tax and economic contributions
- Over 70,000 Homes Powered
- · Local, long term operation and maintenance jobs



## **Overview of Phase 2 of the** *Prairie Sunlight* **Solar Build-out**

#### Phase 2: 1,000 MW<sub>ac</sub> Transmission Grid Projects

#### Phase 2: 2,220 GWh - 1st Year Energy Production

- 3 large utility-scale solar farms in the highest solar resource region of Alberta, connecting directly to the transmission grid
- Over 490,000 tons of Carbon Dioxide Emissions avoided every year
- Constructed entirely by local skilled workers
- Over \$1.4 billion invested into the Alberta Economy during construction with extensive, long term sustainable property tax and economic contributions
- Over 270,000 Homes Powered
- · Local, long term operation and maintenance jobs





## Solar PV in the Current Alberta Energy Market









# The Federal and Alberta Governments both have Laws in Place to Phase-out the Burning of Coal for Electricity Production

## **Current situation**

- Coal accounts for about 60% of Alberta Generation, with 18 Generators at 6,267 MW installed
- Alberta emits more emissions from coal than all other provinces combined

### Coal phase out agreements

- 12 of Alberta's coal plants already scheduled for decommissioning before 2030 amounting to 3,906 MW of installed capacity
- Government will pay transition payments to the remaining plants (2,361 MW) due to operate after 2030
- Plans are to replace coal with, hydro, wind, solar and gas



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## Solar Energy is the Largest Viable Energy Resource in Alberta Solar Generation can now Compete Against Natural Gas in Alberta

LAZARD'S LEVELIZED COST OF ENERGY ANALYSIS-VERSION 10.0

#### Unsubsidized Levelized Cost of Energy Comparison

Certain Alternative Energy generation technologies are cost-competitive with conventional generation technologies under some scenarios; such observation does not take into account potential social and environmental externalities (e.g., social costs of distributed generation, environmental consequences of certain conventional generation technologies, etc.), reliability or intermittency-related considerations (e.g., transmission and back-up generation costs associated with certain Alternative Energy technologies)

	Solar PV—Rooftop C&I <sup>‡</sup>					Ψ×	38			\$222		
				:	\$88				\$193			
	Solar PV—Community			\$78			\$135					
ALTERNATIVE ENERGY <sup>(a)</sup>	Solar PV—Crystalline Utility Scale <sup>(b)</sup>	\$49		\$61	<b>\$92</b> <sup>(d)</sup>							
	Solar PV—Thin Film Utility Scale <sup>(b)</sup>	\$46		\$56	\$92 <sup>(d)</sup>							
	Solar Thermal Tower with Storage <sup>(c)</sup>					\$119		\$1	82	\$237 <sup>(c)</sup>		
	Fuel Cell <sup>‡</sup>				\$106			\$167				
	Microturbine <sup>‡</sup>			\$76	\$89							
	Geothermal			\$79		\$11	7					
	Biomass Direct			\$77		\$110						
	Wind	\$32		\$62	<b>\$1</b> 1	18 <sup>(f)</sup> 🔶						
CONVENTIONAL	Diesel Reciprocating Engine®‡								\$212			\$281
	Natural Gas Reciprocating Engine <sup>(h)</sup> ‡		\$	68		\$101						
	Gas Peaking						\$165			\$217		
	IGCC <sup>()</sup>				\$94					\$210		
	Nuclear				\$97		\$136					
	Coal <sup>(k)</sup>		\$60				\$143					
	Gas Combined Cycle	\$48			\$78							
	\$(	0	\$50	1	\$10	0	\$150		\$200		\$250	\$30

Levelized Cost (USD\$ / MWh)





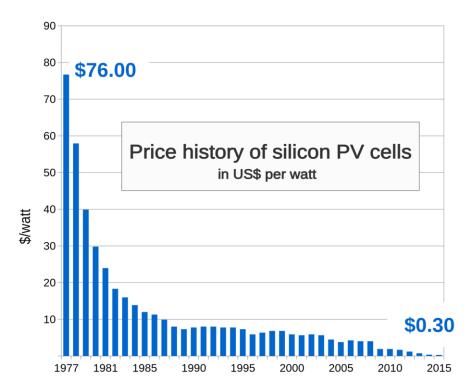


# The Solar Krafte *Prairie Sunlight* Solar Farms are NOT Reliant on Power Pricing Subsidies

# Sustainable Competitiveness

Solar generation, which until recently relied heavily on subsidies just like conventional generation, now provides some of the lowest cost electricity in the world, leading to reduced grid power subsidies and lower power prices.

Since no commodity inputs are burned in order to generate electricity from the sun, long term solar power prices remain steady, and ultimately drop after systems are fully amortized.



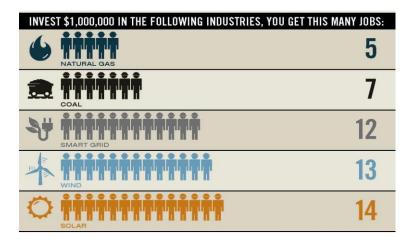
Source: Bloomberg New Energy Finance & pv.energytrend.com







## **Solar Industry Employment in Alberta**



Solar Krafte contributed to the creation of tens of thousands of skilled solar industry jobs in the United States.

Prairie Sunlight represents the largest solar buildout in Canadian history.

The renewable energy future is bright for Alberta, Canada's highest solar resource region.

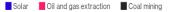
Over the last 8 years, the price of solar modules has fallen from 80% to 30% of the total system cost of a solar farm.

Labour is now the biggest single direct expenditure for the deployment of our solar farms.

Our workers are hired locally, offering extensive training and skilled employment opportunities in Alberta.

#### There Are More Jobs in Solar than Oil and Gas, Coal Extraction in the U.S.

Employment grew 6 percent in solar and slumped 18 percent in upstream oil and gas and support services





Sources: International Renewable Energy Agency, U.S. Bureau of Statistics

Bloomberg 💵





## What Additional Value does Solar Generation Bring to Alberta's Electricity Grid?

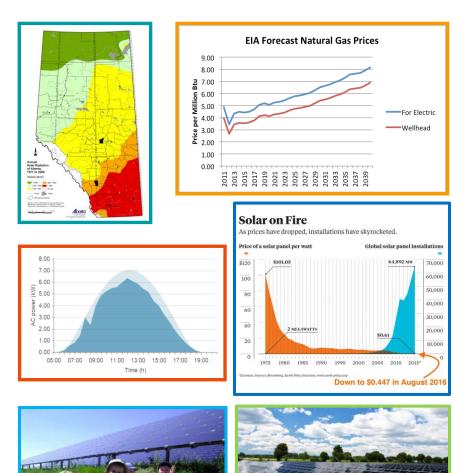
Distributed Generation Increases Grid Reliability

Tapping the Highest Solar Resource in Canada

High Grid Load Daytimeonly Generation fits well with 24/7 Oilsands Cogen and Night-time Wind

Defining Sustainability with No Fuel Consumption and Zero CO2 Emissions from Generation





Long Term Electricity Price Certainty Anchors Alberta's Long Term Industrial, Agricultural and Commercial Competitiveness

Ideal Economic Timing to Deploy Optimized Solar Generation

Developed and Deployed by World Leaders in Competitive Solar Power Generation



# ●BELECTRIC<sup>®</sup>



# No alternative for Alberta's new generation offers a more sustainable and competitive choice than Solar PV





● BELECTRIC<sup>®</sup>



## **About our partners**

innogy

innogy SE is Germany's leading energy company, with revenue of around \$65 billion (2016), more than 40,000 employees and activities in 16 countries. With its three business segments Grid & Infrastructure, Retail and Renewables, innogy addresses the requirements of a modern, decarbonised, decentralised and digital energy world.

With an installed capacity of more than 900 megawatts in offshore wind and with over 1900 megawatts in onshore wind, innogy is one of the major operators in Europe. We plan, build and operate plants to generate power and extract energy from renewable sources. Our aim is to take the expansion of renewables further in the short term, both on our own and working with partners. We believe that working together in this way is the key to making the energy transition a success. With our subsidiary BELECTRIC Solar & Battery GmbH, we have a strong international solar specialist at our side, capable of propelling us into the world-wide development, construction, and long term ownership of large-scale photovoltaic plants.

Further information: www.innogy.com

# ● BELECTRIC<sup>®</sup>

BELECTRIC Solar & Battery GmbH has constructed over 280 solar PV power plants with over 1.7 GWp PV capacity. As one of the largest O&M providers globally, with numerous patents and innovations, BELECTRIC has proven its technological leadership in the industry.

Further information: www.belectric.com

## **BELECTRIC's Reference Projects Around the Globe**

Only solar company worldwide, that has realized PV power plants in all climate conditions

#### Templin, Germany



- Year: 2012
- 128.4 MWp; own development
- Largest PV power plant in Europe, built in 4 months

#### Carport, Saudi Arabia



- Year: 2011
- 10 MWp; EPC
- World's largest solar carport 4000 cars

#### Alt Daber, Germany



- Year: 2011
- 67.8 MWp; own development
- 2014 equipped with EBU: first solar power plant providing primary grid reserve to the high tension grid

#### Landmead, United Kingdom



- Year: 2014
- 46 MWp; project development & EPC
- Constructed in 3 months; 1,500V architecture
- UK's largest solar power plant



- Year: 2015
- 85 MWp; pure EPC
- First relevant solar power plant in Algeria
- Very remote location high logistics effort



- Year: 2011
- 21 MWp; own development
- 900V DC system
- 1<sup>st</sup> time-of-use solar power plant of USA