

SOLAR BY THE NUMBERS

Nathaniel Papay
EPCOR Water Services

IT ONLY TOOK SIX YEARS!

- Nov 2016: 1st Project Charter approved
- Nov 2018: NRCAN awards \$10.7M to add BESS
- June 2019: Public Hearing #1
- March 2020: COVID
- Oct 2020: Public Hearing #2 with approval
- June 2021: Construction starts
- August 23, 2022: 1st solar generation with Water Plant
- October 2022: Full solar generation with Water Plant
- November 2022: Final scenario testing/commissioning with WTP
- Next 30+ years: treating water with on-site solar power

BY THE NUMBERS

- 17,400 homes notified
- 800+ Door knocks/visits



EPCOR E.L. SMITH WATER TREATMENT PLAN SOLAR FARM - NOTIFICATION MAP -



BY THE NUMBERS

- >9,000 years of cultural evidence
- 32,531 catalogued artifacts
- 250m² of hand excavations



BY THE NUMBERS

- 32 Indigenous and Metis nations engaged



BY THE NUMBERS

- 8 scientific studies
- 25 bird species
- 11 wildlife cameras
- 1 mischievous beaver



BY THE NUMBERS

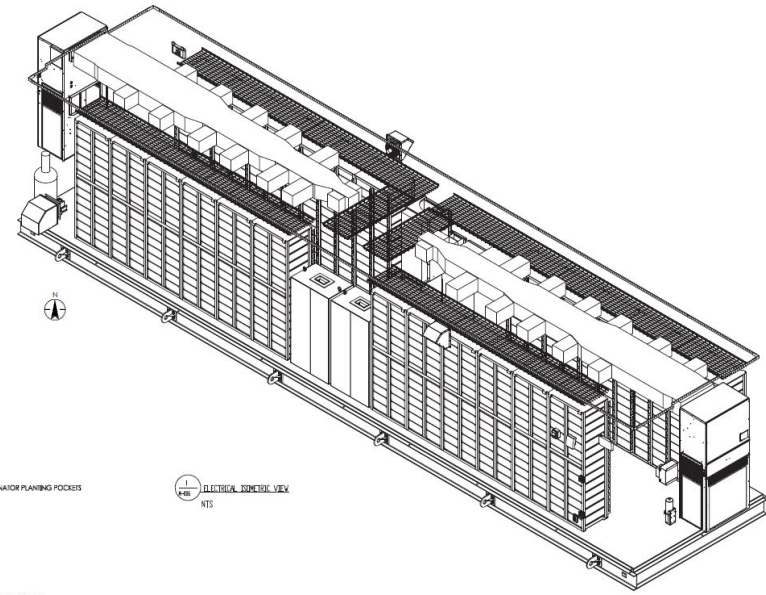
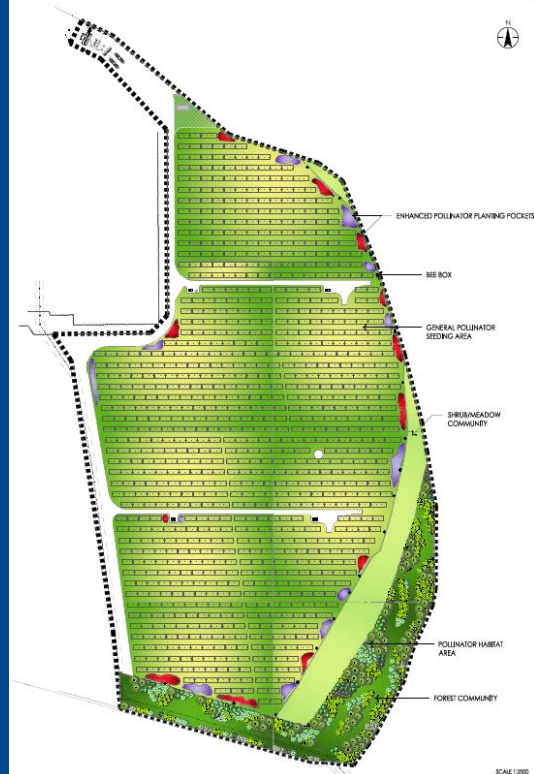
- 2 public hearings
- 26+ hours
- 7 “yes” votes for majority win

SCRIBE			
Charter Bylaw 18890 - To allow for the development of a solar power plant as a co-located facility at the E.L. Smith Water Treatment Plant in the North Saskatchewan River Valley, Regina			
Carried - (7 - 6 - 0)			
		Yes (7)	
D. Iveson	M. Banga	T. Caterina	B. Esslinger
S. Hamilton	B. Henderson	M. Walters	
		No (6)	
T. Cartmell	J. Dziadyk	A. Knack	S. McKeen
M. Nickel	A. Paquette		



BY THE NUMBERS

- 431 engineered drawings



BY THE NUMBERS

- 2800+ helical screw-in foundation piles



BY THE NUMBERS

- 84 KMs of steel beams



BY THE NUMBERS

- 30,350 solar panels (13.6 MW)



BY THE NUMBERS

- 1,009 batteries (56 kg each)



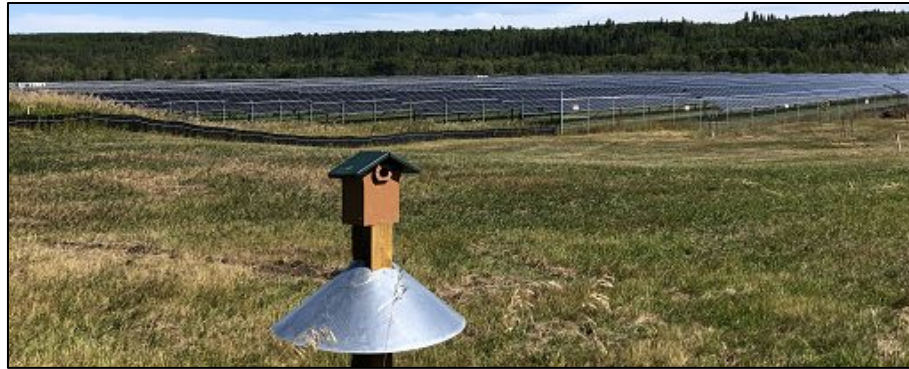
BY THE NUMBERS

- 32km+ of electrical cable



BY THE NUMBERS

- 188 trees
- 1279 shrubs
- 8 bird houses
- 2 bat houses



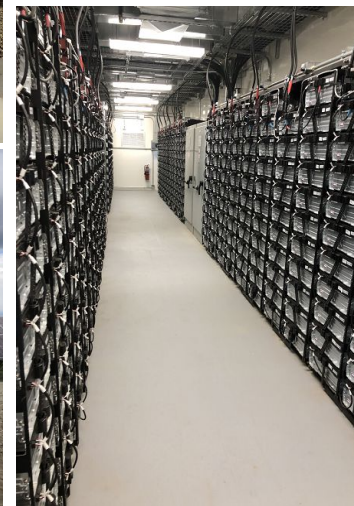
BY THE NUMBERS

- 3 factory assembled buildings:
 - E-house (Calgary)
 - BESS 1 & 2 (Wisconsin)



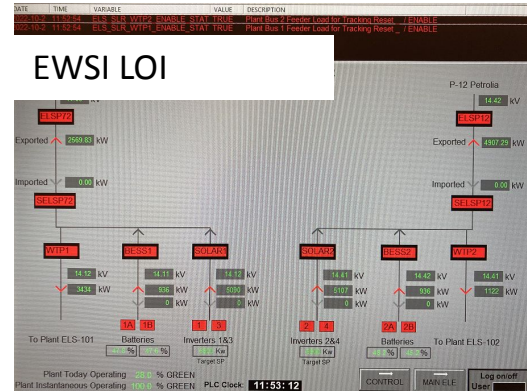
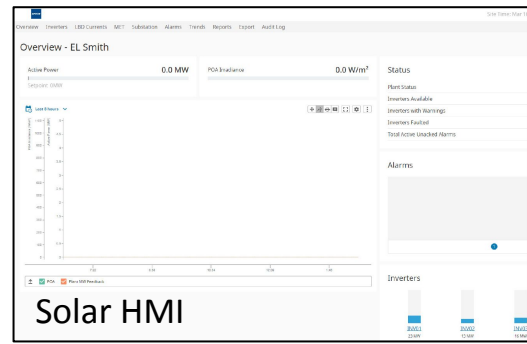
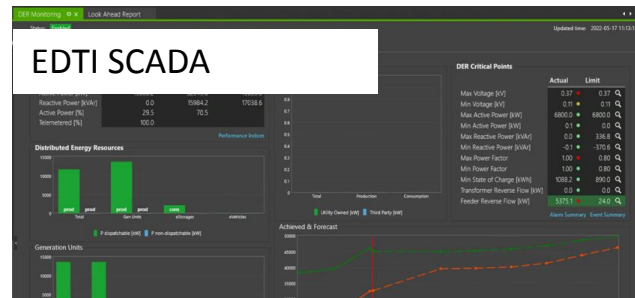
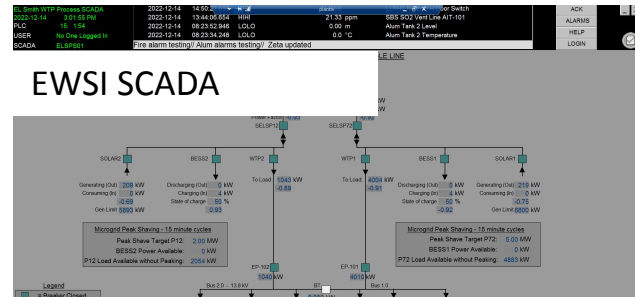
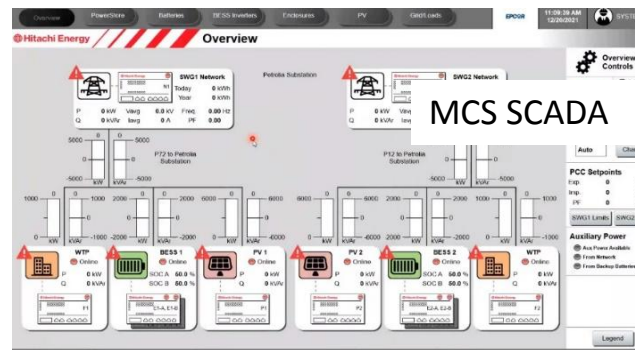
BY THE NUMBERS

- Major equipment from 7 countries: Vietnam, South Korea, China, USA, Israel, Mexico, Italy



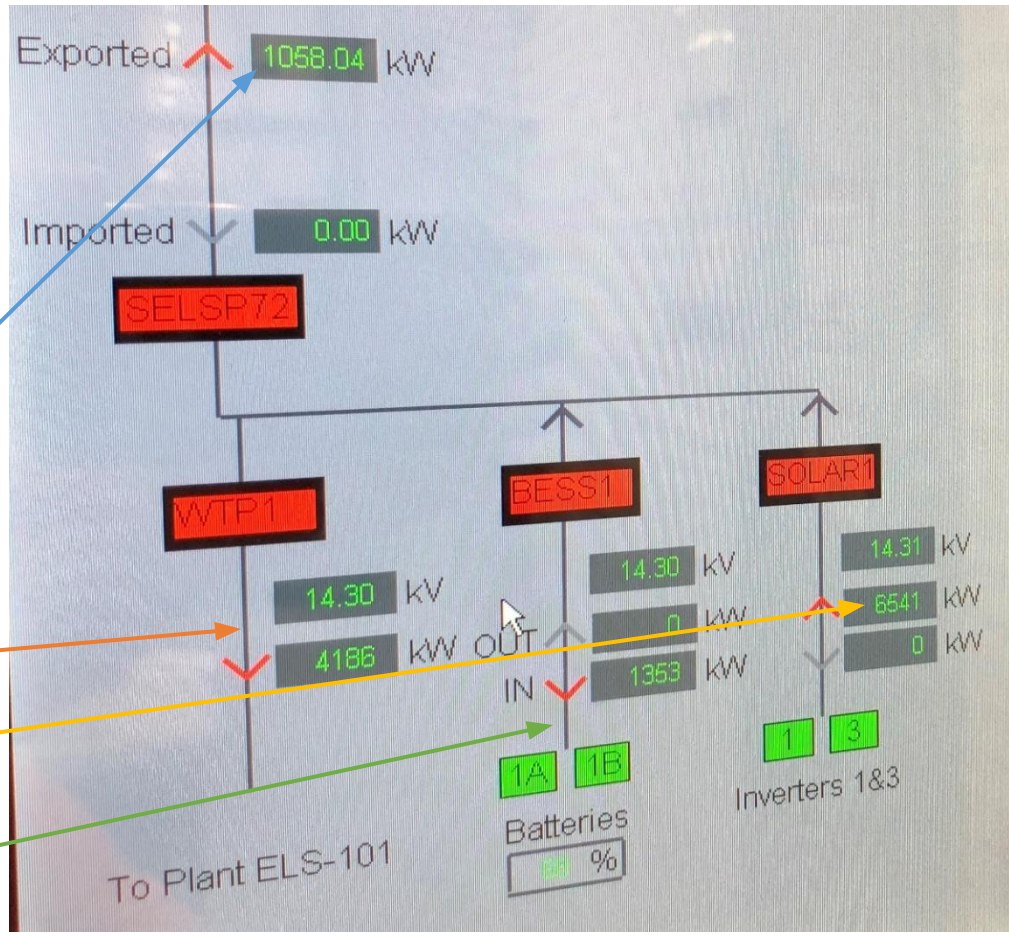
BY THE NUMBERS

- 5 HMI/SCADA systems



BY THE NUMBERS

- 1.1 MW sold to grid
- 4.2 MW to Water Treatment Plant
- 6.5MW solar generated (GHGs)
- 1.3MW to charge batteries



BY THE NUMBERS

- >4,500 project meetings
- 72 monthly project reports
- 75 purchase orders
- 45 PCL contract change orders
- 4 major force majeure impacts:
 - Flooding in BC
 - Storms on east coast USA
 - Typhoon in China
 - COVID: factory shutdown / global supply chain delays

BY THE NUMBERS

- 1 CEO
- 3 SVP's
- 2 Directors
- 100,000+ external hours
- 39,600+ hours by more than 210 EPCOR employees




BY THE NUMBERS

- 12 indigenous workers (2697 hours)
- 6 subcontractors with Indigenous involvement
- 1 Enoch Cree Nation monitor (488 hours)



BY THE NUMBERS

- Dollars

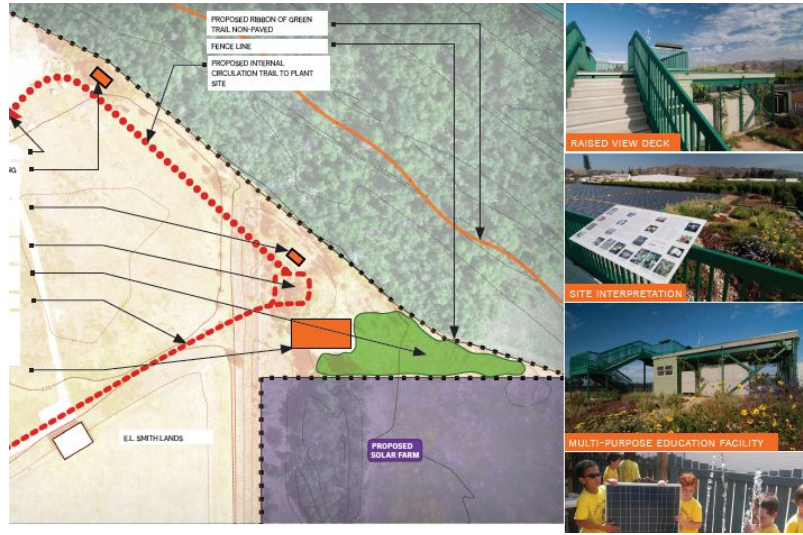
	\$ Spent To Date	Forecast Final Cost
Solar Project	\$ 38.5M	\$41.5M
BESS Project	\$ 9.9M	\$10.8M
NRCAN Funding 		- \$10.8M
Total Cost		\$41.5M

BY THE NUMBERS

- GHG

	Energy (MWh)	Tonnes of CO2
E.L. Smith Water Plant 2022 Load	43,912	22,834
2022 Solar Generation	3,823	1988
% Reduction in GHG		~ 8.7%

Based on current GoA TIER number of 0.52 tonnes/MWh

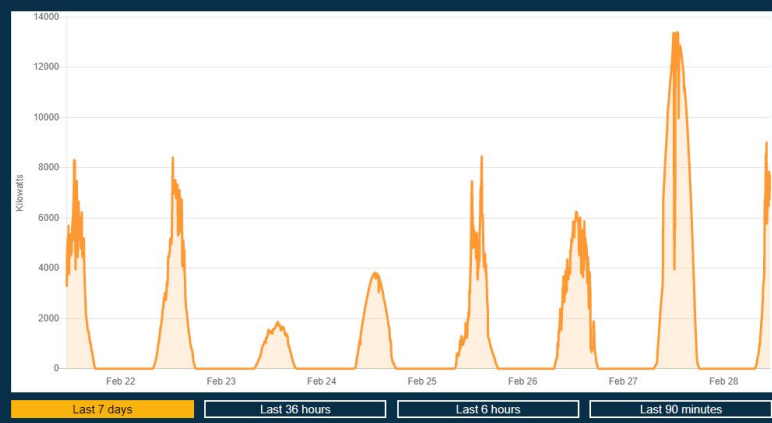


REMAINING WORK

- Off-site educational signage
- Exhibit area
- Wildlife monitoring
- UofA research partnership

KĪSIKĀW PĪSIM SOLAR FARM OUTPUTS

Live data as of February 28, 2023 at 11:04:00 a.m.



7,051.5 kW
Current generation in kilowatts

4,404.4 kWh
Battery storage

4,887.4 MWh
Energy generated since fall 2022 in megawatt-hours (MWh)

4.9%
Renewable energy used by water plant since last month



MORE INFORMATION

[EPCOR.com](https://www.epcor.com)

- Sustainability reporting
- Live data

CLEAN ENERGY TO CREATE CLEAN WATER ON OUR PATHWAY TO NET-ZERO

