

Dundonald Avenue Solar Farm

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Public Engagement Meeting June 22, 2021

Agenda

- Background
- Project Overview
- Visualizations
- Technical Considerations
- Financial Impacts
- Community Impacts
- Next Steps
- Questions



Background

Environmental Stewardship and Sustainability

- Saskatoon Light & Power has a goal of supplying 10% of its electricity from local renewable sources.
- **2014** 1.6MW Landfill Gas Generation Facility was implemented.
- 2016 30kW Solar Demonstration Site implemented at the Landfill Gas Generation Facility in partnership with SES Solar Cooperative, Saskatchewan Polytechnic and Saskatchewan Environmental Society.







Background (Con't)

Environmental Stewardship and Sustainability

• **2017** – City Council set greenhouse gas (GHG) emission reduction targets.

GHG Emissions		
Reduction Targets	2023	2050
Corporate	40%	80%
Community	15%	80%

2019 – City unveiled its Low Emissions Community (LEC) Plan.

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LEC Action# 30 requires the implementation of a utility-scale solar farm.





Project Overview SL&P Service Area

Dundonald Avenue Solar Farm

- **2017** Vacant & undeveloped land ٠ investigated for solar development.
 - 13-acre parcel of land reserved for solar development.
- Land is ideal for solar: •
 - Marginal land. _
 - Limited access. _
 - No impact on neighborhood area plans.
 - South exposure.
 - Near electrical distribution system.



University of Saskatchewan is also serviced by SaskPo

Project Overview (Con't)

Dundonald Avenue Solar Farm

- Led by Saskatoon Light & Power.
- Proposed Location
 - East of Dundonald Ave and west of Circle Drive South.
 - South of 11th Street West.
- 2020 Feasibility study was initiated.
- Land Utilization
 - Solar farm consists of two halves/parcels.
 - North Parcel
 - South Parcel
 - 14 acres of combined land, 2.2MW of solar.





Project Overview (Con't)

Dundonald Avenue Solar Farm

- Partially funded through the Government and Canada and Saskatchewan's Investing in Canadian Infrastructure Program.
- Expected payback is 11 years.
- Expected facility life of 30 years.
- Generate clean renewable electricity to the community (~330 homes).

• Planned operation in 2023.



Visualizations

• Aerial View – looking south



• Aerial View – looking north





• Dundonald Ave - looking east







Circle Drive South- looking north







• Valley Road Overpass - looking north

Service perimeter roadways will be present on both north and south parcels.





• Valley Road - looking north







• 11th Street West entry onto Circle Drive South - looking south





Technical Considerations

Dundonald Avenue Solar Farm

- **Solar Exposure** Saskatchewan is great for solar!
- Earth Works existing slope will not be changed. Runoff and drainage are unchanged.
- Landscaping reduce maintenance.
- Environmental marginal land.
- Easements will be considered.





Technical Considerations (Con't)

Dundonald Avenue Solar Farm

Accessibility & Security

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- No access from 11th Street West allowed due to traffic regulations.
- An entrance from Circle Drive South is not allowed.
- Entrance will be in the middle of the solar farm from Dundonald Ave.
- Private level crossing across railway.
- 2 sound wall panels will need to be removed.
- Property will be fenced and gated.
- No visitors will be allowed for safety.
- Electrical Connections located nearby.







Technical Considerations (Con't)

Dundonald Avenue Solar Farm

- Acoustic Study
 - Aware of previous sound studies undertaken between 2017 and 2019.
 - Change in traffic noise propagated investigated with and without solar.
 - Outcomes under worst case:
 - Odb change predicted during daytime.
 - -1db (insignificant) change predicted during nighttime.
 - 3db change in sound level is considered the threshold for human perception to changes in sound.
 - Some noise can be expected during construction, and no noise expected during operation.





Technical Considerations (Con't)

Dundonald Avenue Solar Farm

Glare Study

- Ocular impact of solar glare quantified into 3 categories:
 - Green low potential to cause after-image (flash blindness).
 - Yellow potential to cause temporary after-image (like direct viewing of brief camera flash).
 - Red potential to cause retinal burn (permanent eye damage).
- Studied impact of reflected light along 10 routes, 4 railways, 18 observation points, air traffic control tower and 4 flight paths.
- Outcomes indicated:
 - Glare is lower from solar when compared with snow.
 - · Trees and walls block predicted glare to the west side.
 - No occurrences of "red glare".
 - 20 to 45 minutes each day of "yellow" glare in certain locations.
 - 120 to 240 minutes each day of "green" glare along one route.
- Both yellow and green glare were within acceptable limits.





Financial Impacts

Dundonald Avenue Solar Farm

- Project Cost Feasibility study has the cost at about \$4.2 million
- **Funding** Application was made to Investing in Canada Infrastructure Program (ICIP) and successful. \$2.5 million awarded. Balance of costs will be funded through internal funding.

Payback –

- Without the grant the payback period is >30 years.
- With the grant the payback period is 11 years, 10% IRR.

Costs Savings -

- Over \$100,000 in annual savings expected across project term.
- Cost neutral to ratepayers.



Community Impacts

Dundonald Avenue Solar Farm

- Local Area Plans
 - Use of land, noise studies and future roadways not impacted.
- Project Benefits
 - Save costs and lower greenhouse gas emissions.

Co-benefits

- Enhance local economy, job creation, renewable energy innovation and attract new residents and visitors.

Lasting Impact

- Knowledge and experience, reputation & leadership towards climate change mitigation.



Next Steps

Dundonald Avenue Solar Farm - Schedule

Timeline	Activity	
June 2020	Feasibility Study Commencement	
June 2021	Community Engagement	
June 22, 2021	Live Virtual Engagement Meeting	
July 2021	Feasibility Study Completion / Tabulation of Results	
Late Summer 2021	Report to City Council	
Fall 2021	If Approved, Issue of Design and Build Tender	
2022	Construction	
Spring 2023	Operation of Solar Farm	



Questions?

Thank you for your time!

Project Team

- Jose Cheruvallath Metering and Sustainable Electricity Manager
- Trevor Bell Director of Saskatoon Light & Power
- Ross Elliott Project Lead
- Ryan Newell Public Engagement Manager
- John Kosteroski Stantec Engineering

