

Energy Evolution Phase 1 and 2017 & 2018 Hydro Ottawa Dividend Surplus – Project Status Updates

Table 1: Energy Evolution Phase 1 Project Status Update

#	Category	Phase 1: Action Items	Lead	Approved Timeframe	Status Update	Comments / Next Steps
1	Solar / Wind / Water Power	Develop a framework for virtual net-metering (VNM) in collaboration with Hydro Ottawa.	Hydro Ottawa, City of Ottawa (PIED)	2017-2018	Stalled, with advocacy under way	Ottawa cannot proceed without a virtual net metering framework from the province. City staff have been advocating for such a framework extensively. Will be included in Electricity Resource Strategy.
2	Solar / Wind / Water Power	Build an 11-megawatt (MW) solar park at the Trail Road Waste Facility (to offset the annual electricity consumed by 25 City library facilities).	City of Ottawa (PIED/BEEM) Energy Ottawa	2019-2020	Stalled	Same as action #1.
3	Solar / Wind / Water Power	Pilot a small-scale virtual net metering project where the VNM credits can be purchased by one or more organization.	Ottawa Renewable Energy Coop (OREC)	2018-2020	Stalled	Same as action #1.

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4	Solar / Wind / Water Power	Build a 500-kilowatt (kW) mini-hydropower system at the Burritts Rapids dam.	Burritts Rapids Renewable Energy Association (BRREA).	2017-2020	Stalled	Same as action #1 with an additional challenge. This prospective virtual net metering project may be more difficult because the connection and prospective customers would be in Hydro One territory.
5	Solar / Wind / Water Power	Convene stakeholders from the development industry and renewable energy sector to facilitate dialogue and solutions for making grid connections easier (e.g., addressing grid capacity and constraints, identifying opportunities to integrate renewable energy in new developments, etc.). End product would be a resolution to outstanding issues that all parties accept.	City of Ottawa (PIED) Support Hydro Ottawa	2018	Ongoing	Many issues grid connections resolved, and a few are still on-going. On-going issues will be considered in Electricity Resource Strategy.
6	Biogas	Undertake a technical and economic analysis to assess current as well as leading-edge practices for the production and utilization of biogas at the Robert O. Pickard Environmental Centre and in other relevant municipal applications (e.g.,	City of Ottawa (PIED)	2018-2019	On-going	Project is roughly 40 per cent complete. Receiving 50 per cent of total project cost through Federation of Canadian Municipality's Green Municipal Fund. Planned completion of the study Q1 2021. Has been considered in the Renewable Natural Gas Strategy.

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		collection and treatment of household organics, potential for CNG fleet vehicles, etc.). Develop and issue a Request for Information (RFI) or Expression of Interest (EOI) to gather information on commercially-viable products and companies with expertise in biogas and renewable natural gas.				
7	Solar / Wind / Water Power	Undertake a scan of propane-fueled municipal buildings where existing heating equipment is due for replacement. Use Natural Resources Canada's RET Screen software to assess and identify facilities that can economically be converted from propane to biomass (i.e., wood pellet) heating systems.	City of Ottawa (BEEM) support: ON Ministry of Agriculture, Forestry and Rural Affairs, Canmet ENERGY	2017	Complete	Cost to retrofit the candidate rural with wood heating proved to be high and a ground source heat pump was selected for installation at the Huntley Community Centre. System was commissioned in October 2019.
8	Solar / Wind / Water Power	Investigate the opportunity to develop a Community Improvement Plan (CIP) in a rural area of the city to promote fuel switching (e.g., propane to biomass heating	City of Ottawa (BEEM) support: ON Ministry of Agriculture,	2018	Ongoing	Program launched in Q2 of 2019 and is currently accepting applications. The program offers up to \$750 towards the purchase of an energy efficient wood burning appliance.

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		systems) and to stimulate economic development.	Forestry and Rural Affairs,			
9	Solar / Wind / Water Power	Seek opportunities to expand rebate programs for air-source heat pumps. Current programs could be expanded to include all types of fossil fuel heating (e.g., propane, oil, natural gas) and could provide rebates for new buildings as well as retrofits.	City of Ottawa (BEEM) Hydro Ottawa or other	2020	Stalled	Currently, conservation programs are silo'ed by fuel type. This precludes the action imagined here and would require a legislative change at the provincial level. Will be advocated through the Residential and Community Building Retrofit Accelerator Programs.
10	Solar / Wind / Water Power	Undertake an economic analysis to determine the feasibility of integrating air-source heat pumps into City facilities currently heated by natural gas.	City of Ottawa (BEEM)	2017	Complete	Study was completed in 2017 and results corroborated with Natural Resources Canada. Study indicates that a modest increase in natural gas prices will make air source heat pumps competitive in many applications.
11	Solar / Wind / Water Power	Implement the Ottawa Community Housing ECO ² Plan to pilot green energy technologies and programs that benefit OCH tenants, the city	Ottawa Community Housing (OCH)	2017-2020	Ongoing	Four of the City's community housing providers have housing built to the passive house standard and consider passive house as the default standard for new construction. Key

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		and the environment. Continue to aim for the highest, most financially feasible energy performance in new affordable housing developments by taking inspiration from leading energy certifications like the Passive House standard.				learnings from these developments will be considered in the development of the High-Performance Development Standard.
12	Solar / Wind / Water Power	Develop a training manual or reference document for developers on how to integrate low-carbon thermal energy systems into new buildings.	City of Ottawa (PIED/BEEM)	2019-2020	Not Started	Education will be considered in the High-Performance Develop Standard.
13	Solar / Wind / Water Power	Consider opportunities to integrate geothermal systems in the design and allocation of park space in new City parks, and update policies where required.	City of Ottawa (PIED/RCFS)	2019-2020	Ongoing	Official plan preliminary policy directions have made provision for this to occur. Will integrate energy and climate mitigation priorities in the New Official Plan and supporting master plans.
14	Solar / Wind / Water Power	Work with a developer and possibly a district energy specialist or a natural gas or electricity distributor to develop a ground source heating system in a new subdivision.	City of Ottawa (PIED); Partner TBD	2019-2020	Planning stage	Will be considered in the High-Performance Development Standard and Community Building Heating Strategy.

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15	Solar / Wind / Water Power	Advocate for the return of federal or other incentives to support ground source heat pumps, such as those previously available through the ecoENERGY program.	City of Ottawa (PIED)	2018	Deferred	Prior to contacting the federal government on this issue, the federal government greatly improved the capital cost allowance for renewable equipment. This was seen to be a good proxy for this initiative and advocacy work in this area was deferred but will be considered in the Residential and Commercial Building Retrofit Accelerator Programs.
16	District Energy	Advocate to provincial government for a low-temperature design standard as part of the Building Code amendments.	City of Ottawa (PIED)	2017-2019 (Ongoing)	Ongoing	The formal consultation period for the national energy code for buildings began in 2020. Will be considered in the High-Performance Development Standards and the Community Building Heating Strategy.
17	District Energy	Hook up cooling in City Hall to the district energy network in the short term and make plans for a heating hook-up.	City of Ottawa (BEEM)	2017-2019	Ongoing	Staff continue to negotiate with the Public Services and Procurement Canada. Chiller water looks feasible, heating water looks more technically and financially challenging (capital and operating).

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18	District Energy	Develop a Memorandum of Understanding (MOU) between the City and the federal government to explore and encourage district energy connections in both new and existing City facilities.	City of Ottawa (PIED/BEEM), Public Services and Procurement Canada (PSPC)	2017-2018	Ongoing	Staff continue to negotiate with the Public Services and Procurement Canada. Potential sites include City Hall and the new Central Library. This is a first step before an MOU.
19	District Energy	Develop a low-carbon district energy system that can be promoted as a high-priority economic impact project. This will generally be in a high growth node or corridor which includes district energy system installation and connections.	City of Ottawa (PIED/Enwave)	2020	Ongoing	Discussions are ongoing. Potential locations include the Gladstone and Bayview areas.
20	District Energy	Undertake a scan of waste heat sources available for thermal use across Ottawa.	City of Ottawa (PIED)	2019	Ongoing	Conceptual work has started on a waste heat survey. An RFP for a survey is planned for Q4 2020. Will be considered in the Community Building Heating Strategy.
21	District Energy	Investigate the requirements for access to the City's road right-of-ways for the purposes of district energy infrastructure.	City of Ottawa (PIED)	2018	Complete	The item has been discussed with City right of way. Requirements for rights of way are that only registered utilities or organizations able to make a long term commitment to 24-7

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						emergency repair and long term upkeep are able to install assets in the right of way.
22	District Energy	Consider opportunities for the installation of underground district energy infrastructure in the design and allocation of park space, and update policies where required.	City of Ottawa (PIED/RCFS)	2019-2020	Ongoing	Official plan preliminary policy directions have made provision for this to occur. Will integrate energy and climate mitigation priorities in the New Official Plan and supporting master plans.
23	District Energy	Advocate for Building Code amendments that require buildings of a certain size and location to be built to be compatible for future district energy connections.	City of Ottawa (PIED)	2017-2020 (Ongoing)	Ongoing	The formal consultation period for the national energy code for buildings began in 2020. Will be considered in the High-Performance Development Standards and the Community Building Heating Strategy.
24	District Energy	Pilot a local community energy planning process where renewable energy generation and conservation can be integrated into different scales of the community.	City of Ottawa (PIED)	2019, 2020	Not Started	Official plan preliminary policy directions have made provision for this to occur. Will integrate energy and climate mitigation priorities in the New Official Plan and supporting master plans. Will be considered in the Energy Community Improvement Plans.

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25	Electrification of Transport (Cars and Light Trucks)	Establish an Electric Vehicle Discovery Centre in Ottawa.	Plug 'N Drive Support: City of Ottawa (PIED)	2018	Modified	With the loss of the provincial EV subsidy, Plug 'N Drive could not support the installation of a permanent discovery center. Plug 'N Drive will be opening a mobile EV discovery centre in Ottawa in October 2020.
26	Electrification of Transport (Cars and Light Trucks)	Continue to host Ottawa EV Day events and educational sessions to engage residents.	City of Ottawa (PIED); EnviroCentre	2017-2020	Ongoing	Successful events continue to be held.
27	Electrification of Transport (Cars and Light Trucks)	Install a 150 kW EV charging station in Ottawa as a pilot/demo project.	City of Ottawa (PIED)	2018	Ongoing	City awarded \$50,000 in Natural Resources Canada funding. Bob MacQuarrie is the selected installation site; installation will commence in Q4 2020.
28	Electrification of Transport (Cars and Light Trucks)	Explore an autonomous vehicle program in Ottawa that integrates EV technology.	City of Ottawa (PIED)	2019	Ongoing	Ottawa's AV testing facilities, called L5, launched in May 2019 and features 16 kilometers of paved roads, multiple intersections, cross walks, one-way streets, street lights, a speed bump and bike lanes.
29	Electrification of Transport (Cars and Light Trucks)	Investigate the feasibility of an autonomous EV shuttle between the LRT and a large employment or large residential area.	City of Ottawa (PIED)	2019-2020	Not Started	Action contingent on progress with AV technology.

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30	Advanced Energy Evolution	Establish a Community Energy Innovation Fund.	City of Ottawa (PIED, BEEM)	2018	Complete	In 2018, Council approved the establishment of a one-time budget of \$500,000 for the Community Energy Innovation Fund. A total of eight community projects were supported through the fund.
31	Advanced Energy Evolution	Establish a corporate Smart Energy Office.	City of Ottawa	2019	Complete	A new Corporate Energy Management Office (CEMO) was established in 2019. The CEMO is responsible for compliance monitoring and performance data analytics, in addition to a broad range of energy-related initiatives that are currently decentralized, including the strategic oversight of energy project delivery and managing financial and reporting processes.
32	Advanced Energy Evolution	Develop Phase 2 Energy Evolution in collaboration with community partners, including the development of a long term governance model.	City of Ottawa (PIED)	2018 - 2019	Complete	The final report is complete. A governance structure will be developed as part of the Climate Master Plan. Staff will provide an annual status on Energy Evolution including how Ottawa is tracking towards targets, projects and budget pressures.
33	Advanced Energy Evolution	Work with community partners to establish a Low Carbon Innovation Centre for Ottawa as part of the Low	Ottawa Community Foundation /	2017-2018	Complete	Seven Low Carbon Cities (LC3) are being established across Canada. The Ottawa LC3 center, hosted by the Ottawa Community

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		Carbon Cities Canada (LC3) initiative being led by the Atmospheric Fund (TAF)	City of Ottawa (PIED)			Foundation, will receive a \$20M endowment and close to \$2M in initial operating funds to advance initiatives to reduce carbon emissions by investing, providing grants, promoting understanding and influencing policies. The City is a member of Ottawa's LC3 advisory board.

Table 2: 2017 Hydro Ottawa Limited (HOL) Dividend Surplus Project Status Update

#	Project	Estimated Total Project Cost	Partner / External Funding	HOL Dividend Surplus Funding Request	Status Update	Area
1	Install a 150 kW EV fast charging station in Ottawa as a pilot/demo project	\$200,000	\$50,000 Secured	\$120,000	City awarded \$50,000 in Natural Resources Canada funding. Bob MacQuarrie is the selected installation site; installation will commence in Fall 2020. Remaining balance funded through PIED.	Suburban
2	Biogas Optimization Study	\$100,000	In partnership with Public Works and	\$50,000	Project is roughly 40 per cent complete. Receiving 50 per cent of total project cost through Federation of Canadian Municipality's	City-wide

#	Project	Estimated Total Project Cost	Partner / External Funding	HOL Dividend Surplus Funding Request	Status Update	Area
			Environmental Services Department		Green Municipal Fund. Planned completion of the study Q1 2021.	
3	Replace propane heating at a corporate facility with biomass and/or heat pumps	\$100,000	Not eligible	\$100,000	Project is complete.	Rural
4	Install controls in facility vestibules to reduce heating costs (estimate of 30 vestibules)	\$45,000	Not eligible	\$45,000	Project is substantially complete.	City-wide
5	Replace outdoor light fixtures at City Hall	\$55,000	SaveOn Energy Rebate	\$55,000	Project is complete.	Urban
6	Wood Heat Changeout Program	\$100,000	In-kind contributions	\$100,000	Program launched in Q2 of 2019 and is currently accepting applications. The program offers up to \$750 towards the purchase of an energy efficient wood burning appliance.	Rural

#	Project	Estimated Total Project Cost	Partner / External Funding	HOL Dividend Surplus Funding Request	Status Update	Area
7	Convert Walter Baker Sports Centre hot tub and kiddie pool heating to heat pump system	\$60,000	SaveON Energy Rebate	\$60,000	Project is complete.	Suburban
8	Upgrade/replace outdoor lighting at Jim Durrell complex (wall sconces and linear tube)	\$100,000	SaveON Energy Rebate	\$100,000	Project is complete.	Urban

Table 3: 2018 Hydro Ottawa Limited (HOL) Dividend Surplus Project Status Update

#	Project Description	Estimated Total Project Cost	HOL Dividend Surplus Funding Request	Status Update	Area
1	Two-year Temporary Full-Time Staff: The temporary full-time position will support the implementation of Energy Evolution projects including the creation of High-Performance Development Standards, an update of the	\$180,000	\$180,000	A temporary full-time staff member was hired in July 2020. This staff is leading the development of a new High-Performance Development Standard and the new Corporate Green Building Policy. This staff was also	City-wide

#	Project Description	Estimated Total Project Cost	HOL Dividend Surplus Funding Request	Status Update	Area
	Corporate Green Building Policy, on-going work with electric vehicle infrastructure and the submission of funding applications			successful in securing Federal funds and is supporting the installation of new electric vehicle infrastructure including one new fast charger at Bob MacQuarrie, 26 electric vehicle chargers at 12 locations in the right of way and one Park and Ride.	
2	Door Sealing: Funds to improve door sealing to the best and most durable materials. A budget of \$10,000 will cover material costs for all buildings in one of the City of Ottawa's three building zones. The City's Building Engineering and Energy Management (BEEM) unit would cover the cost of in installation and supervise the work.	\$10,000	\$10,000	Project is substantially complete.	West
3	Ground Source Heat Pump: Funds for installation of a ground source heat pump at Huntley Community Centre. These funds will cover extra costs of drilling deeper than anticipated.	\$20,000	\$20,000	Project is substantially complete.	West