2016 ANNUAL BRIEFING REPORT featuring "The Road Map Ahead"
Report to stakeholders for the period ended September 30, 2016

SAEWA Annual Report 2016

The Southern Alberta Energy from Waste Association (SAEWA) is a coalition of waste management jurisdictions with an interest in implementing technologies to recover energy from residual waste and reduce long-term reliance on landfill disposal. With membership of 60 plus municipalities, encompassing 12 waste authorities and waste commissions, SAEWA represents a significant portion of the population of Southern Alberta outside of the 3 large urban municipalities.

SAEWA
Southern Alberta Energy from Waste Association

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Message from the Chair

This past year has been one presented with challenge and growth for SAEWA. The entire province has been weathering an economic downturn, and as a result looked towards creating resilience for our Municipalities through development of innovation and diversification especially focused in areas such as climate change, renewable energy, and economic development. Despite all challenges to the economy SAEWA Membership continues to grow strong and invested into the future sustainability of our Province.

It is a testament of the strength of the organization and the commitment of our Members that the level of progress that has been achieved in 2016 was made possible and continues as we make strides toward the development of an Energy from Waste Facility (EfW) that has the potential to treat over 300.000 tonnes of waste to produce energy as an alternative to landfilling.

This project has the potential for substantial economic, social and environmental benefits that will positively impact our Members (265,000 plus population) and the Province of Alberta.

SAEWA, is preparing to facilitate a Strategic Planning Session to check in with its' Member Representatives to evaluate Now – Then priorities. Supported by Provincial facilitation we believe that this exercise will better position the organization to advance project development and confirm its alignment with the Provincial Climate Change Plan.

I would like to thank the Board and Executive for your continued support and commitment to SAEWA and for your vision that has guided us as we work to meet the challenges and opportunities that lie ahead in development of an EfW Facility.

Ben.

Deputy Reeve, Wheatland County

Background

The Southern Alberta Energy from Waste Association (SAEWA) is a coalition of waste management jurisdictions with an interest in implementing technologies to recover energy from residual waste and reduce long-term reliance on landfill disposal. With membership of 60 plus municipalities, encompassing 12 waste authorities and waste commissions, SAEWA represents a significant portion of the population of Southern Alberta outside of the 3 large urban municipalities.

As a sustainable initiative the SAEWA project is working towards developing an Energy from Waste (EfW) Facility that has the potential to treat over 300,000 tonnes of waste. Energy from Waste (EfW) can be a bridge energy solution that can add Low Carbon Fuel energy to the grid when the sun is not shining and the wind is not blowing.

Developing a Detailed Business Plan was a lengthy process and we were pleased to be able to collaborate with Alberta Recycling Management Association (ARMA) on the Waste Stream Characterization. Other opportunities have emerged including receiving grant funding approval from the Federation of Canadian Municipalities (FCM - GMF) to facilitate an Energy from Waste (EfW) Transportation Study which is an essential piece to moving towards scientific evaluation of a viable site.

As the organization is developing a Terms of Reference for the Transportation Impact Study we have recently engaged with the Pembina Institute to gain their expertise towards input in this area which is preliminary to developing the impact study

SAEWA Road Ahead 2016 – 2017:

The Detailed Business Plan was presented to the Board at its September 2016 Regular Board Meeting.

There are three actual documents and 1 Power Point Presentation:

1. SAEWA Report Master Copy Oct 4, 2016
2. SAEWA Executive Summary Final Oct 4, 2016
3. SAEWEA Report Appendix Final Sep 23, 2016
4. SAEWA Board Presentation 08 26 2016 Follow Up PowerPoint

With the exception of the Power Point Presentation all of the Documents will remain confidential until released by the Board.

A number of funding scenarios were explored in the Detailed Business Plan (DBP) and the waste volumes for that purpose were based on the original footprint of SAEWA. Membership has been constantly changing and actual

volumes available with today's membership are lower than original estimates, however SAEWA followed its original Terms of Reference to deliver on the conditions of previous provincial grants.

The funding scenarios ranged from a fully funded Regional Utility similar to a water/wastewater utility or regional transportation to a private sector design build own and operate model. Tipping fees for a Regional Utility ranged from $4.79 -$91.78 per tonne, depending on the level of higher government support the project could receive. The most expensive option was an open market financing model with a tipping fee of $200.07 per tonne.

The next step in the SAEWA project is Site Evaluation and Transportation. In the fall of 2015 SAEWA applied under the Regional Collaboration Program for funds to evaluate the six potential sites for an Energy from Waste Facility that were offered by some of our municipal partners. That grant application was declined by the Province however SAEWA was successful in receiving a Green Municipal Fund grant from the Federal Government that will do a part of the transportation evaluation that includes a Life Cycle Analysis. We have been working with the Pembina Institute to develop a Work Plan that delivers on our environmental and economic interests.

SAEWA believes that we fit well into the governments Climate Change Action Plan and we believe that our solution will not only reduce emissions that can affect our air quality but also protect our precious ground water supply.

Eco-fiscal Policies designed to protect the environment and related to waste management in the UK helped reduce commercial and industrial landfill waste by more than 40% in five years.

For any government initiative, buy in is the key to success. We believe that SAEWA is among the few well established and organized initiatives in Alberta that can check as many boxes on the Alberta Climate Leadership as can SAEWA.

Below is how we see SAEWA contributing to the Provinces' plan:

Coal Phase Out:

As we move away from our reliance on coal as a primary fuel source for power generation we need to ensure that we have the base load or bridge energy load that can provide energy when the wind is not blowing and the sun is not shining; Energy from Waste can fill that void.

Renewable Energy:

Utilising MSW as a fuel that has already created a carbon footprint, it should be considered as a more environmentally friendly way to generate energy. Instead of being landfilled, that "Low Carbon Fuel" can generate energy, reduce the methane releases, potential ground water contamination and long term liabilities associated with landfills. At SAEWA we believe that energy from waste is renewal energy.

Micro Generation:

While WTE does not fit the strict definition of Micro Generation it does fit the intent and description of local power generation and reduces the costs and impact of large expensive infrastructure and distribution networks. District heat and district energy are considered in the SAEWA project.

Innovation and Technology:

The technology around modern WTE facilities is well known in progressive European countries. Emissions management are state of the art and are not compromised at any cost. Value added spinoffs are well known and seen as a benefit to any community hosting such facilities including the hundreds of high paying construction and operating jobs.

Currently SAEWA is considering co-location possibilities with the intent of seeing an Eco-Energy park where solar is co-located on site. This will allow green energy producers to close the loop, provide Bridge Energy and guarantee their customers 24/7/365 green energy options; and they are coming to us.

Greenhouses can be developed within 12 km of an EFW to take advantage of the 1 million plus tonnes of surplus steam available to economically heat them. The reduction of expensive green food imports from other countries will not only make food more affordable but will also create off season jobs in rural Alberta and help diversify their economies. The concentration of green houses in the Medicine Hat area is proof of concept.

Plastics recycling in Alberta has devolved from getting paid for mixed plastics to paying to have it shipped overseas or into the US. The major cost associated with plastics recycling is heat. A well placed EFW can provide a steam heat source that will bring processing back in house and stimulate economic development in an area where it doesn't exist on any demonstrated scale.

There is also a need to meet the CFIA Directive to Alberta to have a plan to address another outbreak of BSE or similar; Hoof and Mouth or Avian Flu. A well-positioned EfW will have the ability to address any outbreak and help mitigate the risk to our Agricultural Industries that export their products.

Bio Energy:

A significant portion of the waste that goes into Class 2 and 3 landfills is Biomass. A well-positioned EfW could convert that Biomass into energy and significantly extend the lifespan of existing landfills and hopefully eliminate the need for new ones. An efficient transportation utility would be key to the success, diverting that biomass away from landfills and using it to generate energy.

Bio solids can also be processed at a suitably designed EfW and solve another expensive problem for many municipalities.

Performance Standards:

The SAEWA solution is not about taking a radical approach; we can deliver a measurable reduction in CO2 and Methane (an extremely potent GHG). We are not trying to prove a concept the technologies are well understood and employed in the most advanced countries in Europe. SAEWA plans on using the best demonstrated technology in application that has predictable and well documented outcomes to use Low Carbon Fuels to create a dependable Bridge Energy source.

Methane:

The production of Methane in landfills has long been recognized as the third largest source of anthropogenic methane in developed countries. Mitigation efforts at landfills are relegated to "capture and flare" where no energy is created or "Capture and Harness" where Land Fill Gas is captured, scrubbed of its' contaminates, and burned in engines to produce electricity. A modern EFW will not only improve on that practice but will be more efficient without the legacy of having to manage and monitor landfills long after they close. Initial engineering estimates that an EfW can reduce CO2 equivalents by 190% over landfilling between 44,500 to 116,200 (MTCO2E/yr) depending on the technology. Our work with the Pembina Institute will seek to evaluate the accuracy of those estimates.

Summary:

We recognize that we are not the only organization competing for air time with the government and have a full understanding of proper process timelines. SAEWA has had limited success in getting meetings with the new government and as a result have been unable to secure any provincial support/assistance or funding to move the project to the next level. We are encouraged by the Premiers statement on Oct 19, 2016 that the government also supports "Thermal" as acceptable energy generation to the government under its' new policies.

SAEWA members came together with a common goal that was borne out of need. Many of our members do not have their own landfills and do not wish to develop same. SAEWA's original goal was to develop a Regional Utility and we will continue to attempt to work with the government in the hopes that they will recognize SAEWA as a key contributor to the reduction of GHG's that is supported by so many municipalities.

In reflection of successes to date some of the major milestone accomplishments of 2015 – 2016 included the finalization of the Governance Model, completion of the Waste Stream Characterization Project, identification of site and technology feasibility taking into account that SAEWA is scheduled to complete the site and transportation project studies Winter 2016 – 2017. SAEWA's project outcomes are not noticeably increasing and the membership continues to expand as a result by an over 10% growth in membership. The Detailed Business Plan will imperatively set the stage for moving the project forward even more aggressively with a construction horizon timeline of 2021.

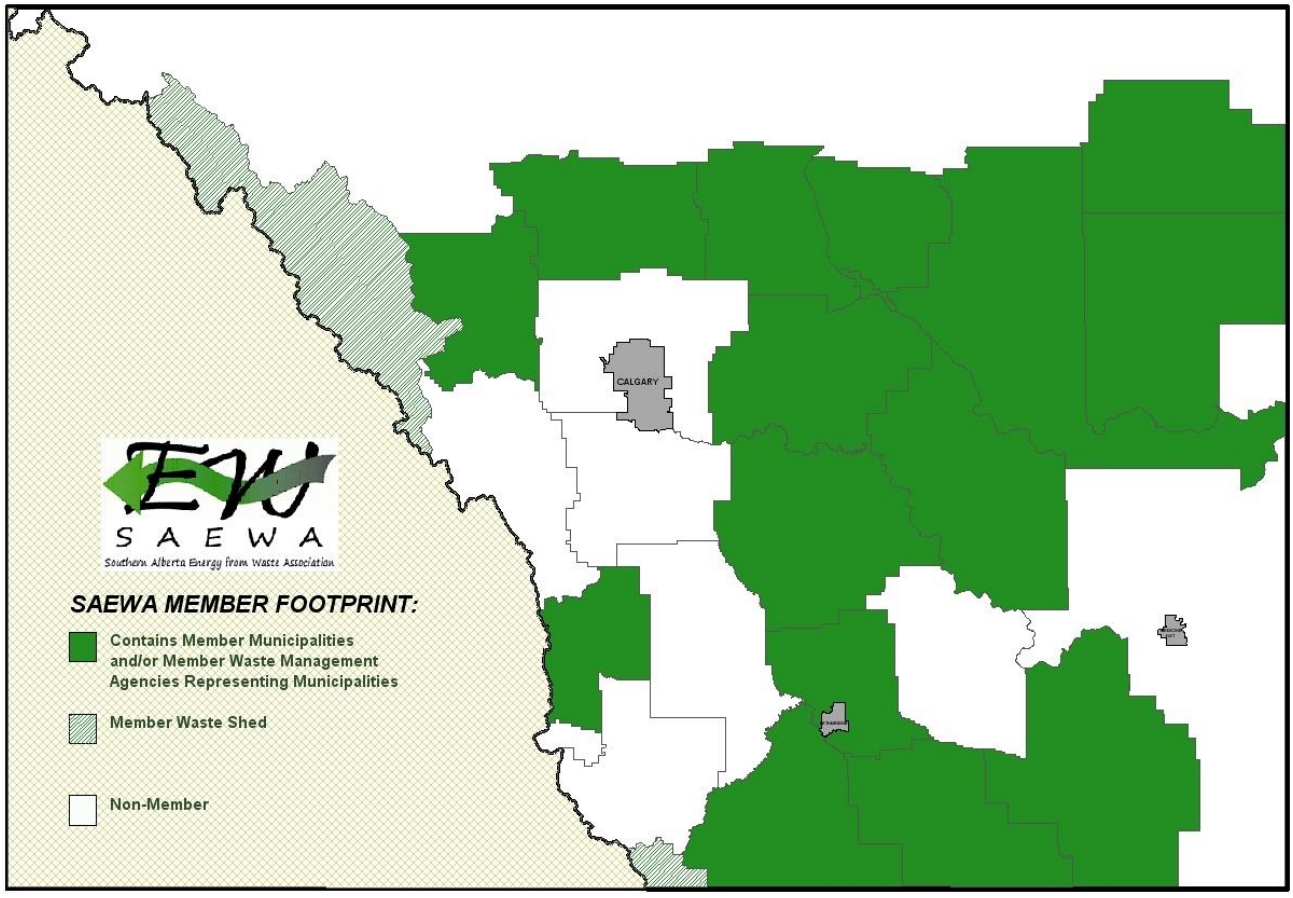
1. **ENGAGEMENT STRATEGY**– a key priority to SAEWA moving the project forward is forming partnerships to empower communication with government and municipal leaderships to demonstrate alignments of the project with the focus of the government towards implementation of the Climate Change Reduction Plan will be essential.

2. **SAEWA** is set to complete the Terms of Reference to undertake the development of the Site, and Transportation Study which is co-funded in partnership with Federation of Canadian Municipalities (FCM).

3. **SAEWA STRATEGIC PLANNING SESSION** is being coordinated and facilitated through Municipal Affairs to assess strategic goals, and alignment with provincial renewable energy priorities.

4. **SAEWA** Membership Growth has seen a 10% increase between 2015 – 2016 including: Town of Three Hills, Mountain View County, Village of Cremona, Town of Olds, Town of Sundre, Town of Carstairs, Big Country Waste Management Association, and most recently the MD of Taber.

***Membership Footprint Map**



*** SAEWA MEMBERSHIP FOOTPRINT MAP**

MEMBERSHIP FAST FACTS:

1. **SAEWA AFTER A SMALL DECREASE IN MEMBERSHIP IN 2015 INCREASED MEMBERSHIP OVERALL BY 10% IN 2016 AND IS EXPECTED TO CONTINUE TO INCREASE AS THE PROJECT MILESTONES PROGRESS IN DELIVERY OF THE DETAILED BUSINESS PLAN, TECHNOLOGY SELECTION, AND SITE SELECTION.**
2. **IN RESULT OF MEMBERSHIP INCREASE IN 2016 WASTE FOOTPRINT INCREASED TO 300,000 tonnes**
3. **THE WASTE POPULATION HAS INCREASED TO 265,000**

AGM 2016 – Forward Looking Statements:

SAEWA is looking forward to the continued strength and commitment of its' current members, and directors as they are positioning the organization to go forward.

SAEWA has overcome many challenges in moving forward foundational planning. The journey has been long and fraught with varied levels of resistance and delays. Resilience has been developed in overcoming many of the challenges and the lessons learned will be captured and shared in a resource handbook to assist others to expedite their planning, and to achieve a similar level of progress of these type projects. This has been identified as a gap by Government and Public Stakeholders to be filled by providing a learning tool that currently does not exist, and will be a valuable resource for (all) municipal non-profits.

Please check out our website ongoing for further information updates found at*:* ***www.saewa.ca***

SAEWA *will continue to maintain its' value to stakeholders, keeping them connected to future project developments moving forward exemplifying their commitment to responsible ideas that foster environmental sustainability and climate impact reduction - as is on the minds of our municipal partners.*

Stay connected to the ongoing updates at ***www.saewa.ca***

For additional information please contact:

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