

Making Cents of Alberta's Water Situation: How to Achieve A Sustainable Water Strategy

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Significant emphasis has been placed on understanding the “net environmental benefits” of using one water source over another within regulatory policy, literature and ongoing dialogue between industry, government, and stakeholders, with ‘environmental benefits’ focused on the biophysical environment. However, to develop a sustainable water strategy, a balance of economic, environmental and societal considerations is required. Sustainability is unlikely to be achieved when importance is placed on only one pillar of sustainability with minimal consideration for the others. As such, a better understanding of the value of water from an economic perspective and if possible, the ecological and societal value, is critical.

For many companies within the water-intensive oil and gas sector, substantial volumes of water are used and managed throughout the lifecycle of a project, with water and wastewater management making up a significant portion of overall capital and annual operational costs. In addition, expenditure for water supply, management, and disposal is increasing. This is due to changing regulations restricting groundwater and surface water use, and limitations on surface water source availability and/or reliability due to climate variability and extreme weather conditions.

Additionally, companies without comprehensive, long-term strategies to secure their water source and minimize their water risk may become heavily reliant on third-party operators for their water and waste needs. This may result in significant, variable costs due to variability of water purchasing, transportation costs, and disposal fees based on supply and demand. As such, the total cost of water use, management and disposal becomes very difficult to estimate and predict throughout the whole lifecycle of a project. This can also lead to inefficiencies in the use and management of water, driving costs up and potentially resulting in an uncompetitive cost model.

So, how is the industry able to manage costs in a downturn market and gain a competitive advantage?

By preparing accordingly and developing a water strategy with focused long-term objectives that are not limited by expensive, short-term solutions. This means having an in-depth understanding of the water source, treatment and disposal options that are available within the area that one operates, which may include:

- Using available data and information to understand the water basin in which one operates, including taking into consideration ecological constraints and the interests of other stakeholders and water users.

- Identifying the most appropriate water source and disposal option given the regional characteristics of an operational area.
- Evaluating the short term and lifecycle economics of water source and disposal options available.
- Considering opportunities for optimization and collaboration.

This presentation will demonstrate the tools and information available to build a sustainable water strategy that tackles the topics of net benefits analysis, cumulative effects, resource management and optimization, and collaboration. Examples of work completed to date through PTAC, COSIA, and Alberta Innovates, as well as data analytics and visualization tools developed (e.g. Multi-Criteria Analysis (MCA), disposal infectivity, WIMS, terrain modelling) to understand the risks associated with water availability and reliability within the province will be highlighted.

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Ms. Oksana Kielbasinski is the Manager of InSolutions Advisory Services and a sustainability and risk specialist at Integrated Sustainability Consultants Ltd. She received her Bachelor of Commerce degree, with a specialization in Finance, from McMaster University.

Oksana has experience in the identification, quantification and management of triple-bottom line risks and benefits associated with projects, specifically in the areas of water and waste management. Oksana has completed economic decision-making analysis for a wide range of customers, including in the oil and gas, mining, and infrastructure sectors, on contaminated sites, and on issues associated with water use and disposal. Oksana has identified and evaluated risks for numerous industry-leading projects, influencing a total installed cost in excess of \$25 billion. Her expertise includes skills in options analysis (e.g. financial analysis, lifecycle assessment, Multi-Criteria Analysis (MCA)), risk management, strategy development, facilitation and collaboration, sustainable project consulting, and regulatory compliance.

Oksana is a recent recipient of the Young Women In Energy award as well as the Clean50 2016 Emerging Leader award.