

**Project Title: Reducing GHG emissions – Low Grade Heat Utilization (Warm to Hot Process Water)**

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**Summary:**

*Proposed Project:*

The proposed project is to recover the low grade heat bearing resources and to convert them to high temperature resources to be able to re-use in the process.

The current industrial practices involves disposal of the low grade heat resources which makes the operation highly inefficient and causes wastage of the heat.

*Technology:*

The proposed technology will help in reduced use of utilities, such as additional water and power, which translates into significant reduction of GHG emission.

However, to implement the proposed process, it may need revamping the current configuration.

It may also need additional investment in terms of equipment and control system changes. It may cause additional GHG emission, however the resultant effect will be carbon neutral when considered the loop of the complete system.

The additional investment prove marginal when compared to benefits of the implementing the technology. This technology will offer following benefits:

- Reduced hot process water demand
- Reduce wastage of warm process water and inherent heat and cost of material handling
- Enough additional supply of hot process water
- Debottlenecking the constraints and allows operations to expand
- Can be utilized for water treatment process

*Opportunity:*

This process/technology offers an opportunity to produce additional Hot Process Water (HPW) from low grade heat bearing Warm Process Water (WPW). It offers a benefit of expansion of production capacity and causes reduction in wastage.

*Environmental Benefits:*

Significant reduction in GHG emission can be achieved.

*Area of application:*

- OilSands (minable, thermal)
- Refinery
- Fertilizers
- Petrochemicals
- Gas Processing
- LNG
- Upgrader

**Project Title: Reducing GHG emission – Energy Efficiencies**