INTRODUCTION TO DE-CARBONIZATION AND ENERGY EFFICIENCY TECHNOLOGY

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Stewardship To Sustainable Operations

LOW GRADE HEAT UTILIZATION

Proposed Project:

The proposed process is designed to recover the low-grade heat-bearing resources and to convert them to high-temperature resources. This allows them to be recycled back in the process. The current industrial practices involve the disposal of low-grade heat resources. That makes the operations highly inefficient and causes wastage of heat.

Technology:

Implementation of the proposed technology will enable reduced use of utilities, such as additional process water and power, which translates into a significant reduction of GHG emissions.

However, to implement the proposed process, the existing process needs to be evaluated and identified the sectors where it may be deployed effectively and efficiently to benefits from its maximum potential.

The existing process configuration may need to be revamped to integrate the latest technologies and could lead to additional investments in terms of equipment and control system changes. It may also cause additional GHG emissions, however, the resultant effect will be carbon neutral when considered the complete loop of the system.

The additional investment will prove marginal compared to the resultant benefits of implementing the technology. This technology will offer the 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
- Reduced usage/handling of steam and condensate

Can be utilized for the 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 the benefit of the expansion of production capacity and causes a reduction in wastage.

Environmental Benefits: Significant reduction in GHG emission can be achieved.

Area of application:

- *OilSands (minable, thermal)*
- Upgraders
- Gas Processing
- *Petrochemicals*
- *Refinery*
- *Fertilizers*