How to use the tool and what are the benefits?

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Benefits of the tool?

- **Communicating to stakeholders**
  - Helps both developer and community understand the potential benefits which helps the long term “sustainability” of the project

- **Means of identifying and enhancing co-benefits**
  - Helps developers identify opportunities to enhance the impact of the project or to add additional social value through community

- **Added value to financiers**
  - More investors taking into account other returns than just financial
    - Impact investors – social return
    - Multilaterals and ODA finance – safeguarding/IFC performance standards
    - Private sector – equator principals

- **Enhancing the perceived quality of the CDM project**
  - Lowers perceived reputational risk for voluntary buyers and helps with their corporate social responsibility (CSR) mandates
  - Compliance market as well as voluntary
  - Premium for quality
How to use the tool?
An example from a Thai project

- **Bangkok Kamphaeng Saen West: Landfill Gas to Electricity Project**
  - Zenith Green Energy Company Limited
  - 8 MW landfill gas to energy project under VSPP scheme
  - 8 x 1.063 MW Gas engines + 3 x 2,000 m³/hr flares
  - Kamphaengsaen, Nakhompatom, Thailand

- **CDM registration - 20th Jan 2011**
  - Also implemented ISO14001 and OHSAS18001
  - IFC performance standards
  - Gold Standard registered

Zenith Green Energy Co., Ltd.
## Environmental co-benefits

<table>
<thead>
<tr>
<th>Category</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>• Reducing SO\textsubscript{x} and NO\textsubscript{x} (Partly)</td>
</tr>
<tr>
<td></td>
<td>• Reducing fly ash, particulates, NMVOCs through displacement of fossil fuel electricity (Slightly)</td>
</tr>
<tr>
<td></td>
<td>• Reducing odours through collection of landfill gas (Partly)</td>
</tr>
<tr>
<td>Land</td>
<td>No co-benefits listed. Options included:</td>
</tr>
<tr>
<td></td>
<td>- producing/using compost</td>
</tr>
<tr>
<td></td>
<td>- irrigation</td>
</tr>
<tr>
<td></td>
<td>- Preventing soil erosion</td>
</tr>
<tr>
<td>Water</td>
<td>No co-benefits listed. Options include:</td>
</tr>
<tr>
<td></td>
<td>- Improving management/control of wastewater</td>
</tr>
<tr>
<td></td>
<td>- Improving reliability/accessibility of water supply</td>
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<tr>
<td>Natural Resources</td>
<td>No co-benefits listed. Options include:</td>
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<tr>
<td></td>
<td>- Protecting mineral resources</td>
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<tr>
<td></td>
<td>- Protecting/enhancing plant life, species diversity, forests etc</td>
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</tbody>
</table>
Environmental co-benefits

- **Reducing SOx and NOx**
  - Thai grid emits around 0.41g/kWh of SO2, project reduced 38.3 tons of SO2 during last monitoring period
  - Thai grid emits around 1.26g/kWh of NOx, project reduced 117.7 tons of Nox during last monitoring period
  - Monitored as part of Gold Standard
  - Local stack emissions from engines are monitored for compliance

- **Reducing Fly ash emissions, SPM (particulates), NMVOCs (non methane volatile organic compounds)**
  - Fly ash, SPM and NMVOCs would be reduced compared to fossil fuel generated electricity but levels are not monitored

- **Reducing Odors**
  - Decomposing organic waste with methane generated and emitted to air results in bad odours
  - Efficient collection of landfill gas reduces odours significantly

- **Noise**
  - No reduction in noise but containerised engines have noise level annual tests to comply with Thai regulations
# Social co-benefits

| Jobs                      | New long-term and short-term jobs  
|                          | New sources of income generation  |
| Health & Safety          | Reducing accidents through training, health & safety officer, and procedures |
| Education                | Extensive job related training including: technical, personal development, health & safety, climate change  
|                          | Outreach programme & awareness raising to community:  
|                          | - Internship programme with Kasetsart University (Kamphaeng Saen campus)  
|                          | - Scholarship programme for local districts: full financial support through higher education  |
| Welfare                  | No co-benefits listed. Options included:  
|                          | - Poverty alleviation  
|                          | - Optimized women’s empowerment |
Social co-benefits

- **New long term jobs**
  - 16 permanent employees (technical, administration, finance) – monitored GS

- **New short term jobs**
  - Up to 15 staff (pipework for gas collection)

- **New source of income generation**
  - A new transmission line had to be built (around 15km) and was paid for by the project.
  - A number of businesses, including food/agro-related factories have opened up close

- **Reduction in accidents**
  - Collection/destruction of hazardous methane

- **Job related training**
  - Comprehensive training – monitored GS

- **Enhanced educational services**
  - 2 students per year (training, job mentoring etc)

- **Project knowledge dissemination**
  - Over 200 visitors including Government/public organisations, Multilaterals, Foreign officials and businesses
<table>
<thead>
<tr>
<th>Economic co-benefits</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Growth</strong></td>
<td>• New investments (foreign investment)</td>
</tr>
<tr>
<td></td>
<td>• New industrial/commercial activities including those that located near to transmission line</td>
</tr>
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<td></td>
<td>• New infrastructure (transmission line)</td>
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<tr>
<td><strong>Energy</strong></td>
<td>• Access to energy (transmission line)</td>
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<td></td>
<td>• Reliability of energy (project operating at around 93% availability with electricity exported to Thai grid)</td>
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<tr>
<td><strong>Technology</strong></td>
<td>• Incorporated gas collection system developed by Sindicatum and adapted to local conditions</td>
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<td>• Full training on use of technology, including maintenance of imported engines and flares</td>
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<tr>
<td><strong>Balance of Payments</strong></td>
<td>Reduction in foreign dependency as electricity generated from landfill gas can displace imported fossil fuel generation</td>
</tr>
</tbody>
</table>
Economic co-benefits

- **New investment, new industrial/commercial activities, new infrastructure and access to energy**
  - 15km transmission line built
  - New businesses located along road with electricity

- **Reliability**
  - Best performing VSPP project in Thailand with plant availability at 93% last year

- **New imported technology**
  - Use of Sindicatum’s own LFG collection system
  - Lots of dissemination through site visits

- **New local technology**
  - Adapting LFG collection system to local conditions in Thailand

- **Knowhow activities for technology**
  - Training, open days, dissemination and movement of staff

- **Reduction of dependency on foreign sources of energy**
  - Renewable energy displaces coal and oil based generation
Use of the SD tool for the project

- Sindicatum was involved in the pilot implementation of the SD tool in Dec 2013
- Sustainable Development Co-benefits Description Reports were approved in Feb 2014
- We incorporated some of the elements of the tool into our marketing and provided the report to buyers as part of their due diligence – Mar 2014
- Achieved sales to the voluntary market – Sep/Oct 2014
- Now applying the SD tool to other projects in our portfolio
ASEAN Energy Awards 2014


Dr. Narongchai Akrasanee, Minister of Energy, Ms. Ratchaneewan Pulnil and Ms. Chanika Chakarawet, Sindicatum Sustainable Resources (Thailand) Co., Ltd., and Mr. Ariphong Phuchaum, Permanent Secretary of Energy Ministry
THANK YOU FOR YOUR ATTENTION

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