VPPAs as part of a comprehensive energy strategy

Karen Cecil, Director
Environmental Sustainability

September 18, 2019
## Cummins at a glance

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries &amp; territories</td>
<td>190</td>
</tr>
<tr>
<td>Global employees</td>
<td>62,610</td>
</tr>
<tr>
<td>Engines built in 2018</td>
<td>1.5M+</td>
</tr>
<tr>
<td>Wholly-owned &amp; independent</td>
<td>8,000</td>
</tr>
<tr>
<td>distributor &amp; dealer locations</td>
<td></td>
</tr>
<tr>
<td>Invested in research &amp; development in 2018</td>
<td>$894M</td>
</tr>
<tr>
<td>Years of industry leadership</td>
<td>100</td>
</tr>
</tbody>
</table>
"We believe that our survival in the very long run is as dependent upon responsible citizenship in our communities and in the society, as it is in responsible technological, financial and production performance."

- - J Irwin Miller

FonnerChainnan and CEO
1972
Our Mission: Making people’s lives better by powering a more prosperous world

Our Vision: Innovating for our customers to power their success

- Heavy-duty Truck
- Medium-duty Truck & Bus
- Agriculture
- Construction
- Oil & Gas
- Fire & Emergency
- Marine
- Mining
- Light-duty Automotive & Recreational Vehicle
- Defense
- Power Generation
- Rail

Powering work in a more sustainable way

This is not an exhaustive display of Cummins-powered markets.
Cummins environmental sustainability targets

TO ACHIEVE BY

2020

3.5 million

Metric tons of carbon dioxide (CO₂) reduced annually through fuel efficiency gains from products in use.

32%

Energy intensity reduction in facilities, adjusted by hours worked.

50%

Reduction in direct water use intensity, adjusted by hours worked, with 15 sites achieving Water Neutrality.

95%

Company-wide facility recycling rate with 30 sites achieving Zero Disposal status.

10%

Reduction in CO₂ per KG of company goods shipped annually.
Cummins energy footprint and goal

Reduce GHG emissions through:

- Energy efficiency
- Renewable energy

REDUCE ENERGY USE INTENSITY IN FACILITIES

2020 GOAL 32 PERCENT

2018 PROGRESS • 29 PERCENT
Cummins renewable energy portfolio

Onsite owned (11 projects, 0.5%)

Onsite PPA (3 projects, 1.1%)

Guiding principles:
- Additional
- Tangible
- Cost effective
- Transparent
Primary PPA drivers

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Economic</th>
<th>Hedge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce environmental impact</td>
<td>Achieve renewable goals while making money</td>
<td>Secure lower energy price than today’s market</td>
</tr>
<tr>
<td>Maintain reputation &amp; brand leadership</td>
<td>Take advantage of unique tax benefit</td>
<td>Lock in low price over the long-term</td>
</tr>
</tbody>
</table>
Internal Stakeholder Engagement

VPPA Working Team

- Treasury
- Accounting & Finance
- Tax
- Legal
- Environment
- Purchasing

Company Leadership Team, BOD
Potential VPPA Risks

- **MARKET**
  - Uncertainty of future wholesale prices

- **EXECUTION**
  - Uncertainty of project completion

- **OPERATION**
  - Ability to maintain source in long run

- **REPUTATION**
  - Unexpected environmental, community and reporting issues

Identified risks can be mitigated in various ways (i.e. project developer, contract negotiation)
Virtual power purchase agreements

1. Customer signs VPPA with developer for wind power at a fixed rate. Term is typically 10-20 years.
2. Developer sells customer’s power into the wholesale market and receives market price.
3. Developer sends/receives settlement to/from customer (settlement = wholesale price minus fixed rate).
4. Customer receives the environmental attributes (Renewable Energy Certificates) associated with the generated power.
Favorable Winds Behind Cummins Strategy to Expand Low Carbon Energy

Cummins Indiana VPPA
- 75 MW
- 262,000 MWh/year
- 26% global electricity
- 165,000 MTCO₂e/year

The company’s share of the energy generated by the expansion’s 61 wind turbines is more than Cummins uses at all of its Indiana facilities.
Projected GHG reduction effect of our energy efficiency initiatives, 2010-2020
Cummins VPPA case study

- Alignment with company principles and goals
- Cost-benefit analysis
- Risk mitigation approach

<table>
<thead>
<tr>
<th>Risk</th>
<th>Initial</th>
<th>Final</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market (Price) Risk</td>
<td>Red</td>
<td>Green</td>
<td>Potential that market costs drop below our contract price</td>
</tr>
<tr>
<td>Negative Price Risk</td>
<td>Red</td>
<td>Green</td>
<td>Developer sells into market at a negative price, which may be incentivized by tax credits</td>
</tr>
<tr>
<td>Accounting Risk</td>
<td></td>
<td></td>
<td>Triggers unwanted accounting treatments</td>
</tr>
<tr>
<td>Legal risk</td>
<td></td>
<td></td>
<td>Legal liabilities arising from contract and operation of the wind farm</td>
</tr>
<tr>
<td>Reputational risk</td>
<td></td>
<td></td>
<td>NIMBY issues; any negative backlash associated with the operation of the selected project</td>
</tr>
<tr>
<td>Environmental risk</td>
<td></td>
<td></td>
<td>Potential harm to wildlife, sensitive habitat, etc.</td>
</tr>
<tr>
<td>Execution and operational risk</td>
<td></td>
<td></td>
<td>Project delays, cancellations and/or poor performance</td>
</tr>
</tbody>
</table>

1919-2019
CHALLENGE
THE IMPOSSIBLE

100