

**PROPOSED BSER FOR NEW OR RECONSTRUCTED STATIONARY COMBUSTION TURBINES UNDER SECTION 111(b)**

Phase I (By date of promulgation or upon initial startup)	Phase II Beginning in 2032 or 2035	Phase III Beginning in 2038
<b>Low Load Subcategory (Capacity Factor &lt;20%)</b>		
<p><b>BSER:</b> Use of low emitting fuels (e.g., natural gas and distillate oil)</p> <p><b>Standard of Performance:</b> 120 lb CO<sub>2</sub>/MMBtu-160 lb CO<sub>2</sub>/MMBtu, depending on fuel type</p>	<p>No proposed Phase II BSER component or standard of performance</p>	<p>No proposed Phase III BSER component or standard of performance</p>
<b>Intermediate Load Subcategory (Capacity Factor 20% to ~50%<sup>1</sup>)</b>		
<p><b>BSER:</b> Highly efficient simple cycle generation</p> <p><b>Standard of Performance:</b> 1,150 lb CO<sub>2</sub>/MWh-gross</p>	<p><b>BSER:</b> Continued highly efficient simple cycle generation with 30% (by volume) low-GHG hydrogen co-firing by 2032</p> <p><b>Standard of Performance:</b> 1,000 lb CO<sub>2</sub>/MWh-gross</p>	<p>No proposed Phase III BSER component or standard of performance</p>
<b>Base Load Subcategory (Capacity Factor &gt;~50%) Limit</b>		
<p><b>BSER:</b> Highly efficient combined cycle generation</p> <p><b>Standard of Performance:</b></p> <ul style="list-style-type: none"> <li>770 lb CO<sub>2</sub>/MWh-gross for EGUs with a base load rating of 2,000 MMBtu/h or more</li> <li>770 lb – 900 lb CO<sub>2</sub>/MWh-gross for EGUs with a base load rating of less than 2,000 MMBtu/h</li> </ul>	<b>Low-GHG Hydrogen Pathway BSER</b>	
	<p><b>BSER:</b> Continued highly efficient combined cycle generation with 30% (by volume) low-GHG hydrogen co-firing by 2032</p> <p><b>Standard of Performance:</b> 680 lb CO<sub>2</sub>/MWh-gross</p>	<p><b>BSER:</b> 96% (by volume) low-GHG hydrogen co-firing beginning in 2038</p> <p><b>Standard of Performance:</b> 90 lb CO<sub>2</sub>/MWh-gross</p>
	<b>CCS Pathway BSER</b>	
	<p><b>BSER:</b> Continued highly efficient combined cycle generation with 90% CCS by 2035</p> <p><b>Standard of Performance:</b> 90 lb CO<sub>2</sub>/MWh-gross</p>	<p>No Phase III BSER component or standard of performance</p>

<sup>1</sup> The upper bound is source-specific that is based on the design efficiency of the combustion turbine.

## PROPOSED BSER FOR EXISTING SOURCES UNDER SECTION 111(d)

BSER	Emissions Guideline/ Presumptive Performance Standard
<b>Large, frequently operated existing fossil fuel-fired stationary combustion turbines (larger than 300 MW with an annual capacity factor of greater than 50 percent)</b>	
<b>CCS Pathway BSER:</b> Highly efficient generation with 90% CCS by 2035	90 lb CO <sub>2</sub> /MWh-gross
<b>Low-GHG Hydrogen Pathway BSER:</b>	
<ul style="list-style-type: none"> <li>• Highly efficient generation with 30% (by volume) low-GHG hydrogen co-firing by 2032</li> <li>• Highly efficient generation with 96% (by volume) low-GHG hydrogen co-firing by 2038</li> </ul>	680 lb CO <sub>2</sub> /MWh-gross
	90 lb CO <sub>2</sub> /MWh-gross
<b>Long-term coal-fired units</b> (Coal-fired steam generating units that have not committed to cease operations by January 1, 2040)	
90% CCS by 2030 <sup>2</sup>	88.4% reduction in annual emission rate (lb CO <sub>2</sub> /MWh-gross) from the unit-specific baseline
<b>Medium-term coal-fired units</b> (Committed to ceasing operations between December 31, 2031 January 1, 2040 and that are not in other categories)	
Natural gas co-firing at 40% (by volume) of the heat input to the unit by 2030	16% reduction in annual emission rate (lb CO <sub>2</sub> /MWh-gross) from the unit-specific baseline

<sup>2</sup> Same BSER applies to existing coal-fired steam generating units that underwent a large modification (i.e., a change that increases hourly CO<sub>2</sub> emissions by more than 10% compared with previous 5 years).

**Near-term coal-fired units**

(Coal-fired steam generating units committed to ceasing operations between December 31, 2031 and January 1, 2035, and adopting an annual capacity factor limit of 20%)

**Imminent-term coal-fired units**

(Coal-fired generating units committed to ceasing operations before January 1, 2032)

Routine methods of operation and maintenance

**Emission Guideline:**

No increase in emission rate (lb CO<sub>2</sub>/MWh-gross)

**Presumptive Performance Standard:**

An emission rate limit (lb CO<sub>2</sub>/MWh-gross) defined by the unit-specific baseline

**Base load natural gas- or continental and non-continental oil-fired steam generating units**

(annual capacity factor greater than or equal to 45% for gas-fired and continental oil-fired)

(annual capacity factor greater than or equal to 8% for non-continental oil-fired)

Routine methods of operation and maintenance

**Emission Guideline:**

No increase in emission rate  
(lb CO<sub>2</sub>/MWh-gross)

**Presumptive Performance Standard:**

An annual emission rate limit of 1,300 lb CO<sub>2</sub>/MWh-gross (except for non-continental oil-fired units, which is an emission rate limit (lb CO<sub>2</sub>/MWh-gross) defined by the unit-specific baseline)

**Intermediate load natural gas- or continental and non-continental oil-fired steam generating units**

(annual capacity factor greater than or equal to 8% and less than 45% for gas-fired and continental oil-fired)

(annual capacity factor greater than or equal to 8% for non-continental oil-fired)

Routine methods of operation and maintenance

**Emission Guideline:**

No increase in emission rate  
(lb CO<sub>2</sub>/MWh-gross)

**Presumptive Performance Standard:**

An annual emission rate limit of 1,500 lb CO<sub>2</sub>/MWh-gross (except for non-continental oil-fired units, which is an emission rate limit (lb CO<sub>2</sub>/MWh-gross) defined by the unit-specific baseline)