



Attachment 1 (required): Summary for publication

1. **Project name:** Energy conservation and emission reduction project of special steel smelting and rolling

2. **Organization name:** Jiangyin Xingcheng Special Steel Works Co., Ltd.

3. **The essence of the project:** In August 2016, Xingcheng Special Steel joined the UN Global Compact and committed to continuously implement the sustainable development plan. This project was proposed to carry out energy conservation and emission reduction. The technical methods and measures adopted in the Project are of great popularization and can be widely used in iron and steel industry and other similar enterprises.

4. **Problem description:** China accounts for 28% of the world's emissions, and is a priority area of UN's work of energy conservation and emission reduction. Based on the calculation, the emissions of sulfur dioxide, nitrogen oxides and particulate matter in the iron and steel industry in 2017 were 1.06 million tons, 1.72 million tons and 2.81 million tons respectively, accounting for 7%, 10% and 20% of the total emissions of the country, which is one of the main sources of air pollution in China. Therefore, it is necessary to actively take measures to achieve energy conservation and emission reduction.

5. **Measures and methods adopted in the Project:** 1) SIPOC process and flowchart; 2) the MSA system; 3) VoC and Benchmarking; 4) C&E Matix, FMEA; 5) Six-sigma methodology, root causes analysis and DOE, Control Charts.

6. **Resources used:** 1) Financial input: USD 17.86 million; 2) personnel input: 65 core management personnel, including 2 senior management personnel, 22 management and technical personnel, 1 Six Sigma Black Belt personnel, 2 Green Belt personnel and 38 production and operation personnel; 3) equipment input: two denitration reactors, two 50 m³ ammonia storage tanks.

7. **Results to be obtained:** 1) The emission of particulate matter is reduced to 256 tons/year (reduction rate 93%); sulfur dioxide is reduced to 758 tons/year (reduction rate 92%); the emission of nitrogen oxides is about 1480 tons/year (reduction rate 76%); economic benefit is about RMB 14.84 million; 2) the natural gas consumption decreased by 3 million m³, the water consumption decreased by 3.2 million tons, the comprehensive energy consumption per ton steel decreased by 5.7%; 3) the company was selected into the list of the first batch of green factories by the government; 4) "DAKT" formed 3 patents and won the First Prize Award.

8. **Influence on the UN Sustainable Development Goals:** 1) The emission reduction promotes UN SD Goal 3 and 9; 2) The energy conservation effect promotes UN SD Goal 7; 3) "DAKT" formed 3 patents and won the First Prize, which promotes UN SD Goal 8; 4) Selected into the list of the first batch of green factories promotes UN SD Goal 12.

