

# Tyndall Carbon Standard

## Co-Benefit Valuation Framework

### 1. Co-Benefit Categories

The Tyndall Carbon Standard requires projects to deliver measurable contributions to **Sustainable Development Goals (SDGs)**. Key co-benefit categories include:

- **Health:** Reduced household air pollution (HAP) and associated diseases (SDG 3).
- **Gender Equity:** Women's empowerment via employment, time savings, and decision-making roles (SDG 5).
- **Economic Development:** Job creation, income generation, and fuel cost savings (SDG 8).
- **Environment:** Reduced deforestation, biodiversity conservation, and soil/water protection (SDG 15).

### 2. Quantification Metrics

Co-Benefit	Metric	Example
Health	Disability-Adjusted Life Years (DALYs) saved	0.02 DALYs saved/stove/year (WHO 2023)
Gender Equity	Hours saved/month on fuelwood collection	15 hours/month/household (field surveys)
Economic	Income generated for women in stove assembly	\$500/year/job (project payroll data)
Environment	Hectares of forest preserved annually	1,200 ha avoided deforestation (GIS)

### 3. Valuation Methods

#### Health

- **DALYs Saved:** Valued at **\$5,000/DALY** (WHO benchmark).
  - = DALYs Saved} x \$5,000
  - *Example: 15,000 stoves × 0.02 DALYs/stove × \$5,000 = \$1.5M/year.*

#### Gender Equity

- **Time Savings:** Valued at local wage rates (e.g., **\$2/hour** in Enugu).
  - = Hours Saved x \$2 x 12 months
  - *Example: 15,000 households × 15 hours/month × \$2 × 12 = \$5.4M/year.*

#### Economic

- **Job Creation:** Value = jobs × average annual income.
- *Example: 200 women employed × \$500/year = \$100,000/year.*

#### Environment

- **Forest Preservation:** Valued using **REDD+** carbon rates (\$5–\$15/tCO<sub>2</sub>e).  
 Value = Hectares Preserved x Carbon Stock x Price  
*Example: 1,200 ha × 200 tCO<sub>2</sub>e/ha × \$10 = \$2.4M/year.*

### 4. Certification Process

1. **Baseline Assessment:** Establish pre-project conditions (e.g., HAP exposure, deforestation rates).
2. **Monitoring Plan:** Use IoT sensors for stove usage, surveys for health/gender metrics, and satellite imagery for deforestation.
3. **Third-Party Verification:** Auditors validate data against Tyndall Card Standard's **SDG Toolbox** and **Monitoring & Evaluation Guidelines**.
4. **Certification:** Co-benefits are issued as **SDG Impact Statements** alongside carbon credits.

### 5. Example: Enugu Cookstove Project

- **Health:** 15,000 stoves reduce HAP by 70% → **300 DALYs saved/year** → **\$1.5M/year**.
- **Gender:** 200 women employed + 225,000 hours saved annually → **\$5.5M/year**.
- **Environment:** 1,200 ha forest preserved → **\$2.4M/year**.



- **Total Co-Benefit Value: \$9.4M/year** (excluding carbon revenue).

## 6. Reporting & Transparency

- **Public Dashboard:** Real-time co-benefit data (e.g., hours saved, jobs created).
- **Tyndall Carbon Standard Registry:** Co-benefits tagged to SDGs and traceable to buyers.
- **Stakeholder Inclusion:** Communities verify outcomes via participatory audits.

## 7. Key Resources

- Tyndall Carbon Standard's **SDG Impact Framework** (2024).
- WHO Guidelines for Indoor Air Quality (2021).
- IUCN Biodiversity Metrics for Forest Projects (2022).

This framework aligns with Tyndall Carbon Standard's requirement to **quantify, monetize, and verify** non-carbon benefits, ensuring projects deliver holistic value to communities and ecosystems.