

CONQUERING CARBON

Developing A Strategy For Decarbonization



SustainableSolutions
CORPORATION

Reducing operational carbon and setting a strategy to meet science-based targets can seem like a daunting task, but if we all work together we can make a significant impact. Many companies, cities, and government agencies are setting bold carbon neutral and net zero energy goals.

Conquering operational carbon will require resourceful global strategies and an emphasis on reducing operational carbon at the source. But first, let's understand what operational carbon is and how you can set a strategy for reducing your carbon footprint.

WHY IS OPERATIONAL CARBON IMPORTANT?

The extraction of fossil fuels, traditional means of producing electricity, and our reliance on the combustion of fossil fuels to manufacture products creates significant carbon emissions and environmental impacts. Electricity is still predominantly generated by burning coal or natural gas which releases greenhouse gases (GHG), creates solid waste, and releases other pollutants into the land and water. In 2021, electricity production is ranked as the third highest industry for releasing toxic chemicals into the air based on the EPA's Toxics Release Inventory (TRI)¹. Operational carbon has detrimental impacts on both our environment and human health.

OUR CURRENT SYSTEM OF ELECTRICITY PRODUCTION COMES FROM THESE SOURCES:



Source: [US Energy Information Administration](#)

SCOPE 1, 2 AND 3 GREENHOUSE GAS EMISSIONS



Scope 1:

Direct GHG emissions from sources owned or controlled by a company

- Fuels utilized for building heating and process operations
- On-site energy generation
- Company vehicles and equipment



Scope 2:

Indirect GHG emissions from a company's purchase of generated energy

- Purchased electricity
- Purchased steam
- Purchased heating & cooling



Scope 3:

Indirect GHG emissions from sources that a company does not own, but relate to their operations

- Business air travel
- Supplier emissions
- Waste disposal
- Procured goods

1. Source: [US Environmental Protection Agency](#)



HOW CAN COMPANIES REDUCE SCOPE 1 AND SCOPE 2 EMISSIONS?

- Benchmark and baseline to understand energy consumption and carbon footprint
- Conduct a Sustainable Operations Assessment of company facilities
- Implement operational and behavior changes
- Implement building and equipment energy conservation measures
- Purchase green power (wind, solar, hydro)
- Consider installing on-site renewable energy
- Purchase off-site renewable energy credits
- Buy carbon offsets

BENEFITS OF OPERATIONAL CARBON REDUCTION:

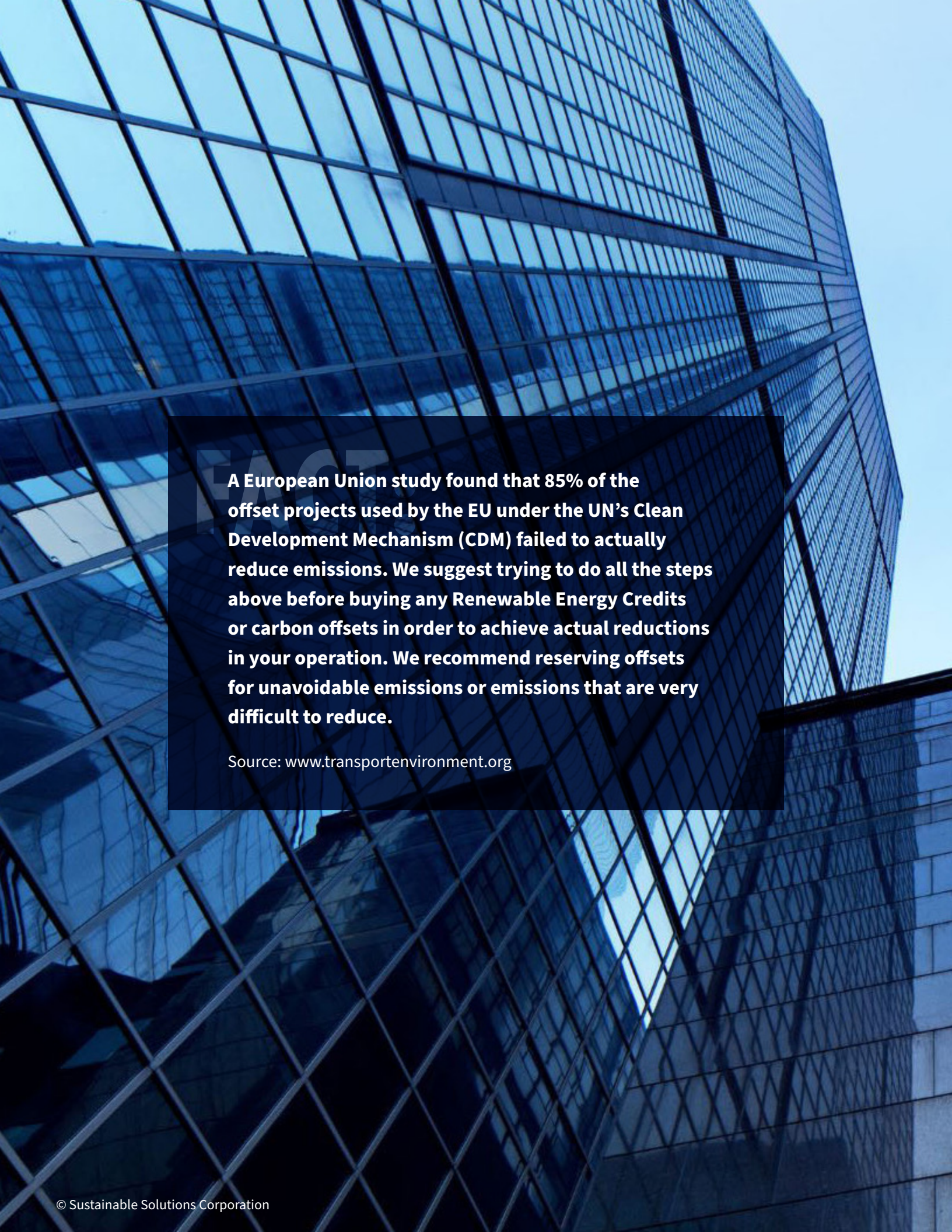
- Cost savings
- Decreases environmental impacts and future liability for carbon tax
- Supports the goals of environmental justice
- Reduces air pollutants
- Indirectly reduces power plant emissions and smog
- Reduces embodied carbon of a product
- Indirectly reduces the impacts of extracting fossil fuels from the earth
- Demonstrates a company's commitment to meeting sustainability goals and science-based targets
- Increases employee attraction and retention
- Meets investor and banking requirements

STRATEGIES FOR REDUCING SCOPE 3 EMISSIONS:

While Scope 3 emissions are not considered operational carbon, they are still an important piece of your decarbonization strategy.

- Conduct supplier surveys to understand their sustainability activities
- Understand your supply chain logistics and the contributing impacts to your company's carbon footprint
- Develop a sustainable supply chain strategy to help your suppliers reduce their carbon footprint.
- Conduct life cycle assessments for products in your supply chain
- Reduce waste in your operations and strive for zero waste
- Minimize travel by conducting virtual meetings

Measuring and managing Scope 3 emissions presents greater challenges than Scope 1 and Scope 2 emissions. For many companies, Scope 3 emissions represent the greatest contribution to their emissions profiles and can be significantly larger than their Scope 1 and Scope 2 emissions.



A European Union study found that 85% of the offset projects used by the EU under the UN's Clean Development Mechanism (CDM) failed to actually reduce emissions. We suggest trying to do all the steps above before buying any Renewable Energy Credits or carbon offsets in order to achieve actual reductions in your operation. We recommend reserving offsets for unavoidable emissions or emissions that are very difficult to reduce.

Source: www.transportenvironment.org

OPTIMIZE YOUR OPERATIONS TO DECREASE YOUR CARBON FOOTPRINT

Sustainable Solutions Corporation (SSC) understands that reducing operational carbon is essential for the longevity of every business. We conduct Sustainable Operations Assessments (SOA) to help your company optimize your operations and decrease your carbon footprint. The goal of an SOA is to audit and analyze your existing operations' energy and water usage as well as waste production to identify inefficiencies and opportunities to reduce overall spend and consumption.

CONQUERING CARBON: A ROAD MAP TO REDUCE YOUR OPERATIONAL CARBON

Benchmark & Baseline

SSC coordinates with facility personnel to collect all the necessary data to develop a baseline of your company's current carbon footprint. SSC benchmarks your operational data to establish a baseline from which your company can set future carbon reduction goals or evaluate existing goals.

Conduct Sustainable Operations Assessment

SSC conducts an on-site – Operations Assessment (SOA) at your facilities. In Phase 1, SSC identifies

opportunities for energy, water, waste and emissions reductions. SSC evaluates preliminary low-to-no cost opportunities for operational efficiency improvements as well as cost savings potential.

Deliver Recommendations

In Phase 2, SSC develops a comprehensive technical and economic feasibility analysis of proposed upgrades, including return on investment, payback periods, and available incentives or grants. SSC delivers a detailed report including a road map for achieving carbon reduction goals and recommendations for immediate and long-term implementation.

Client Implementation

Client implements SSC's recommendations and also integrates new processes into overall sustainability strategy.

Training and Education

SSC conducts an educational training session for our client's facility managers, technical personnel, and sustainability teams to drive implementation of sustainable operations and promote continuous improvement. To ensure every facility is following recommendations and best practices identified in Step 3, SSC can develop a Sustainable Operations Checklist and Guidelines Playbook, providing a standardized approach to sustainable operations.

"I am very impressed with SSC's professionalism, attention to detail, and, most of all, the level of cost savings identified through this project. Not only did they provide a roadmap of how to implement improvements at my facility, they quantified and emphasized recommendations that could be accomplished immediately with minimal upfront costs and quick paybacks."

Heidi Marquardt, Continuous Improvement and Sustainability Manager at ASSA ABLOY Door Group - Curries




 **1. OPERATIONAL & BEHAVIORAL CHANGES**

 **2. BUILDING & EQUIPMENT UPGRADES**

 **3. GREEN SUPPLY CONTRACT**

 **4. THERMAL SOLUTIONS: ELECTRIFICATION**

 **5. ONSITE SOLAR**

 **6. OFFSITE RENEWABLE ENERGY**

 **7. OFFSETS AND RECS**



SUSTAINABLE OPERATIONS ASSESSMENTS INCLUDE:

- **ENERGY AUDITS**

An audit and analysis of operations' energy usage to identify inefficiencies and opportunities to reduce overall spend and energy consumption.

- **WATER AUDITS**

Detailed review of water use and reclamation / reuse opportunities to reduce total water usage and identify cost savings throughout.

- **WASTE CHARACTERIZATION**

SSC does a hands-on assessment that measures, characterizes, and quantifies material flows and all waste streams in order to properly understand your operations. We evaluate your current system for handling and management of materials and waste.

- **WASTE DIVERSION AND ZERO WASTE**

Waste equates to lost resources and profits, and reducing all forms of waste is critical to an effective and sustainable business strategy. Diverting waste from landfill as well as reducing waste before it's created not only reduces costs, but also positions an organization as a responsible market leader.

Establishing sustainable operations and maintenance programs to improve facility operating efficiency can save 5 to 20 percent on energy, water and waste costs with minimal capital investments.

ACHIEVE MEASURABLE IMPACTS WITH A SUSTAINABLE OPERATIONS ASSESSMENT

Energy

- Identify significant resource users (SRUs) and costs
- Understand where is energy being used
- Identify opportunities to reduce demand, such as:
 - Turning off equipment when not in use
 - Investing in higher-efficiency equipment
 - Upgrading to LED lighting + optimizing lighting controls
 - HVAC optimization
 - Waste heat recovery opportunities
 - Performing a compressed air and steam system analysis

Water

- Identify significant resource users (SRUs) and costs
- Identify where water is being used—inputs/outputs

- Identify opportunities to reduce demand, such as:
 - Switching to closed loop systems
 - Installing low-flow fixtures
 - Optimizing cleaning procedures

Waste

- Understand where materials are being used in processes and associated costs
- Evaluate raw materials and packaging
- Identify where waste is generated in processes
- Investing in higher-efficiency equipment
- Work through waste diversion hierarchy to determine opportunities to reduce waste production
- Conduct waste characterization to understand materials and points of generation
- Identify reuse opportunities or alternative outlets

Click here to learn more about how to develop a decarbonization strategy aligned with your science-based targets.



[In this video](#), Nate Gillette, a Project Manager at SSC and Ashlyn Rimsky, an Account Manager at SSC, answer questions about Sustainable Operations Assessments.



[Using Sustainable Operations Assessments to Set Your Decarbonization Strategy with Lora Urbaniak from SSC.](#)

PARTNERS FOR PRACTICAL SOLUTIONS

Sustainable Solutions Corporation (SSC) was founded on the simple belief that organizations could run their businesses better—for the planet, for their bottom line, and for the communities they serve. Leveraging years of applied experience and industry leading expertise, SSC acts as a trusted advisor to revolutionize business operations through sustainability. We have perfected a system that is designed for maximum return on investment and have helped hundreds of clients improve their bottom line and reduce environmental impacts.

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