# PATHWAY TO ACHIEVE YOUR CORPORATE SUSTAINABLE DEVELOPMENT GOALS

MioTech | Innovate for a Sustainable Future

**Jack Hai**

**May. 2022**

# 1. About MioTech

# Corporate Profile

MioTech leverages artificial intelligence to solve the sustainability, climate change, carbon neutrality, and social responsibility challenges faced by financial institutions, corporations, governments, and individuals.

## Industry Affiliations

Signatory of: PRI Principles for Responsible Investment

HKGFA 香港綠色金融協會 Hong Kong Green Finance Association

CECA 中国节能协会 China Energy Conservation Association

中国建筑材料联合会 China Building Materials Federation

## Investors

J.P.Morgan Asset Management

GIC

Moody's

Horizons Ventures 维港投资

國泰君安國際 GUOTAI JUNAN INTERNATIONAL

ZhenFund 真格基金

tom

HSBC

- Beijing: Sales & Marketing, R&D
- Shanghai: R&D
- Hong Kong: Global Sales & Marketing
- Singapore: Global Sales & Marketing

# Team

Our team consists of finance and technology talents from world-renowned institutions in Silicon Valley, Wall Street, Hong Kong, and China. Of over 140 employees, 85% are engineers trained in finance, big data, and artificial intelligence.

## Jason Tu

***CEO***

Stanford MBA, led multiple teams in Standard Chartered Bank, WeLab, and Robinhood

## Tao Liu

***CTO***

Cornell CS Master, specialized in distributed database and data infrastructure at Oracle and Turn

**Xu Tian** COO

**Fay Wu** Head of Research

**Jack Hai** VP of Carbon & EMS

**Leo Wu** VP of China Sales

**Qing Liu** VP of ESG & Financial Services

**Jeff Chen** VP of Consumer Products

Other employee backgrounds:

# Products & Services

## ESG & Financial Services

AMI

Asia's largest ESG data platform providing comprehensive coverage and in-depth data for investment strategy, credit evaluation, risk management, and quantitative analysis.

ESGhub

The central hub for corporate, portfolio, supply chain, and subsidiary ESG data management, analytics, reporting, and reviewing.

SPREADI

Financial spreading made easy with one-click data extraction from financial statements, automatic standardized conversions, and custom accounting models.

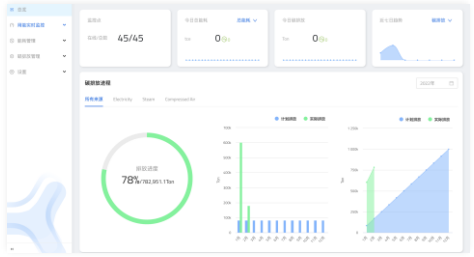
### ESG Consulting

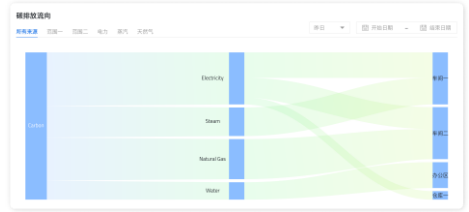
- ESG due diligence
- ESG benchmarking & target-setting
- ESG integration, risk mitigation, strategy formulation & implementation
- ESG ratings improvement
- Ongoing ESG performance tracking
- Internal ESG training
- ESG fund or capital allocation strategy

## Carbon & Energy Management

CARBØNLENS

- IoT, AI-enabled Carbon Emission & Energy Management System
- LCA + PCF Analysis
- Carbon Asset Development
- Net-Zero Roadmapping
- Carbon-neutral Consulting and Climate Risk Advisory





## Capital Markets

- **ESG Index + Financial Products**

  Provide data feeds, methodologies, and frameworks for thematic indices, ESG ratings and ETF products.

- **ESG Research**

  Facilitate data-driven analyses across topics like macroeconomics, sector-specific trends, and green finance developments.

- **IPO Sustainability Advisory**

  Fully prepare prospective IPOs in sustainability and ESG to attract maximal investment and attention.


## Green Living

绿喵

An app and community aiming to reduce individual carbon footprints. Green Mio gamifies and incentivizes users to engage in sustainable activities by rewarding emission-reducing behaviors with mio points .

- Promotes projects like tree planting, poverty alleviation, carbon offset programs (CER), and biodiversity.
- Collaboration with eco-friendly partners like EV charging stations, plant milks, etc.

# 2. PATHWAY TO ACHIEVE YOUR CORPORATE SUSTAINABLE DEVELOPMENT GOALS

-- Carbon Neutralization

PATHWAY TO SUSTAINABLE DEVELOPMENT

# CO2 Emission @ Organizational Level vs. Supply Chain Level

## Organizational Level Emission

### Scope 1
Direct Emissions

- Energy Combustion
- Own Production

- Coal
- Natural Gas
- Methane emission
- …

### Scope 2
Indirect Emissions

- Purchased Electricity
- Purchased Heat

- Electricity
- Steam
- Compressed Air
- …

## Product/Supply Chain Level Emission

### Scope 3
Other Indirect Emissions

- Upstream and Downstream Emissions
- Business Travel
- Packaging
- Logistics
- …

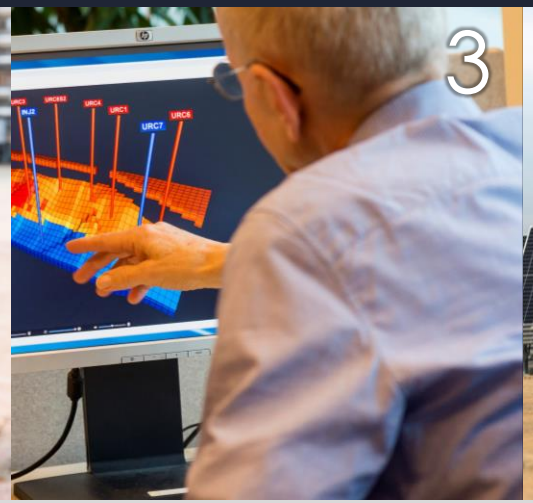
# 2.1. Organizational Level Carbon Neutralization

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Pathway to Carbon Neutralization

We summarized and generalized the 5-steps enterprise carbon neutralization roadmap in terms of sequence and degree of difficulties.







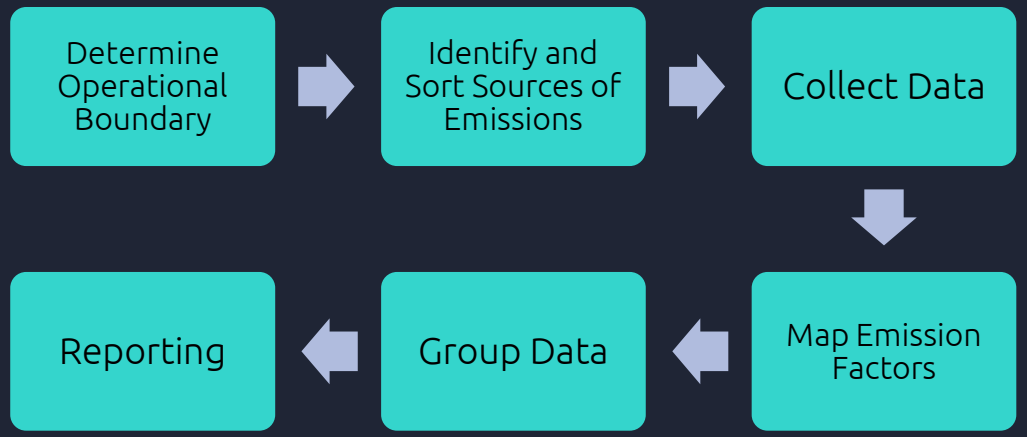

| Evaluation & Tracing | Elimination & Reduction | Efficiency Improvement | Energy Structure Optimization | CCUS & Offset |
|---|---|---|---|---|
| Carbon & EMS | Smart Lighting Control | Air Compressor Optimization | Distributed solar panel | CCUS |
| Carbon MRV | HVAC Intelligent control | Boiler Optimization | Distributed solar heat | CCER |
| | Thermal Insulation Improvement | Motor & Pump Optimization | Biomass | Carbon Trading |
| | Reduce Consumables usage | Production Process Optimization | GSHP/ASHP | |
| | Behavior Management | LED Lighting | Equipment Electrification | |

PATHWAY TO SUSTAINABLE DEVELOPMENT

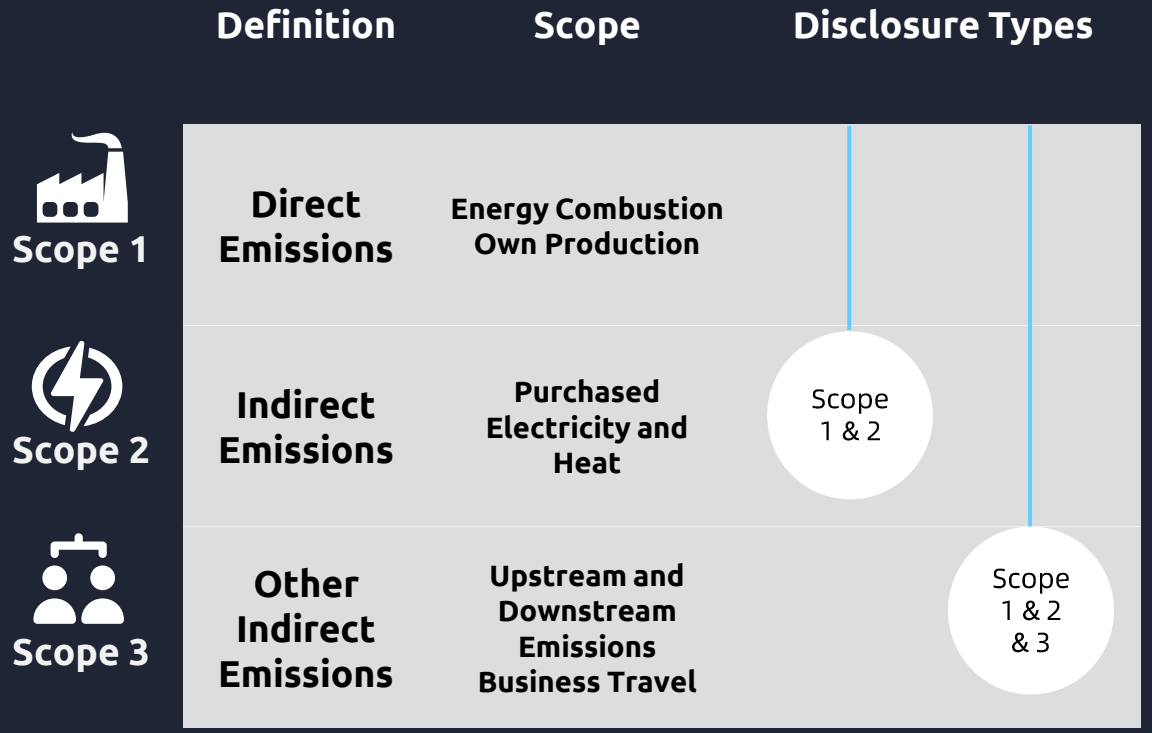
# Step 1.1 Carbon Inventory

**The first step towards Carbon Neutralization is always to understand where you are right now.**

From organizational level, you need to identify the sources of carbon emissions and calculate the volume and intensity of carbon emissions, in order to formulate more efficient strategies to reduce carbon emissions, and reach emision peak and eventually carbon neutrality.




## GHG Emissions



## PATHWAY TO SUSTAINABLE DEVELOPMENT

# Step 1.2 Digitized Carbon & Energy Management System

**Various real-time data sources enable transparent and efficient Carbon & Energy Management**

Electricity | Steam | Coolant | Comp. Air

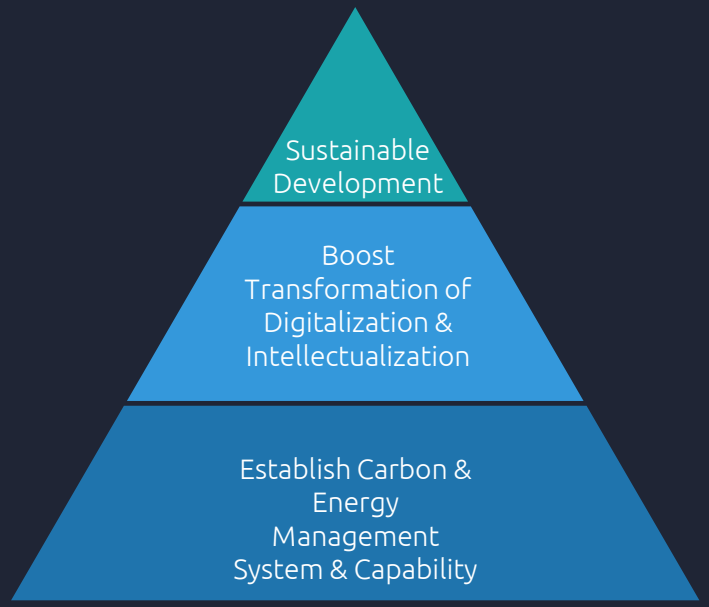
Natural Gas | Water | VOC | Others

- Comprehensive Realtime Monitoring
- Ascertain Current Status

- Intelligent Analysis
- Identify Reduction Opportunities

- Value Quantification of Reduction Solutions

- Group-level Control & Visualization of Carbon-neutral Progress




PATHWAY TO SUSTAINABLE DEVELOPMENT

# Step 2. Reduction & Elimination

## Situation

Lighting & Heating in factory & admin building usually counts for 10-20% of the overall energy consumption, these equipment are manually controlled in general.

## Issue

- Left open when no demand
- Over cooling / heating
- Fixed power, cannot automatically adjust according to environment

## Solution

- Use smart swith/circuit breaker & rules engine to control the equipment
- Use motion sensor/light sensor to control lighting duration and strength
- Use temp. sensor & PID controller to optimize heating system

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Step 3. Efficiency Improvement

## Situation

Boiler and Furnace are often used in factories as heating source for production process and office building. Its energy consumption could not be neglected.

## Issue

- Capacity & Demand mismatched
- Ash accumulation & coking reduce thermal efficiency
- High exhausts temperature leads to energy waste

## Solution

- Operation strategy optimization
- Use new materials on thermal exchange surface to enhance thermal exchange
- Waste heat recovery

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Step 4. Energy Structure Optimization

## Solar Panel

| Area | Installed Capacity | Annual Operation Hour | Power Generation | Carbon Reduction |
|---|---|---|---|---|
| 1,000 ㎡ | 100KW | 1,825 h | 182,500 kwh | 137 ton |

## Forklift

Diesel → Electricity

## Heating

Ground source heat pump

Biomass

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Step 5. Offset

## Demand

**Regulated Market**

- Allowance + CCER → Compliance
- Asset Management

**Voluntary Market**

- Social Responsibility
- Branding & Marketing

## Consulting

- Trading
- Project Development
- Compliance Management
- Asset Management

## Supply

**Emission Reduction Companies**

- CCER
- VCS
- CER
- GCC
- GS

# 2.2. Product & Supply Chain Level Carbon Neutralization

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Product Carbon Footprint

## What is LCA?

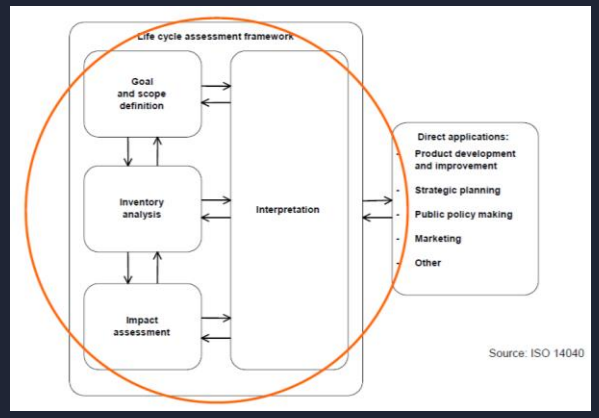
Life Cycle Analysis; a quantitative assessment of the potential environmental impacts of a product (or service) throughout its life cycle (i.e. "cradle to grave") from raw materials, production, distribution, use, and disposal stages.

## What is PCF?

Product Carbon Footpring; the total direct and indirect GHG emissions caused across the entire life cycle ("cradle to grave" or "cradle to gate") of a product (or service), measured as "$CO_2$ equivalent".

## Scope


## Framework




## Benefits

Optimize Supply Chain Management

Industry Leadership

Enhance Brand Image
Prepare for net-zero

## Active Companies

BASF We create chemistry

iPhone

Coca-Cola

adidas

BAOSTEEL

PATHWAY TO SUSTAINABLE DEVELOPMENT

# Emission Reduction In Different Phases

## Raw Material Extraction

- Recycled Material
- Low carbon material
- …

## Manufacturing

## Logistics & Packaging

- Electricity/H2 Fuel
- SAF
- Recycled Packaging
- Bottle vs. Bulk delivery
- …

## Usage

- Energy Efficiency
- …

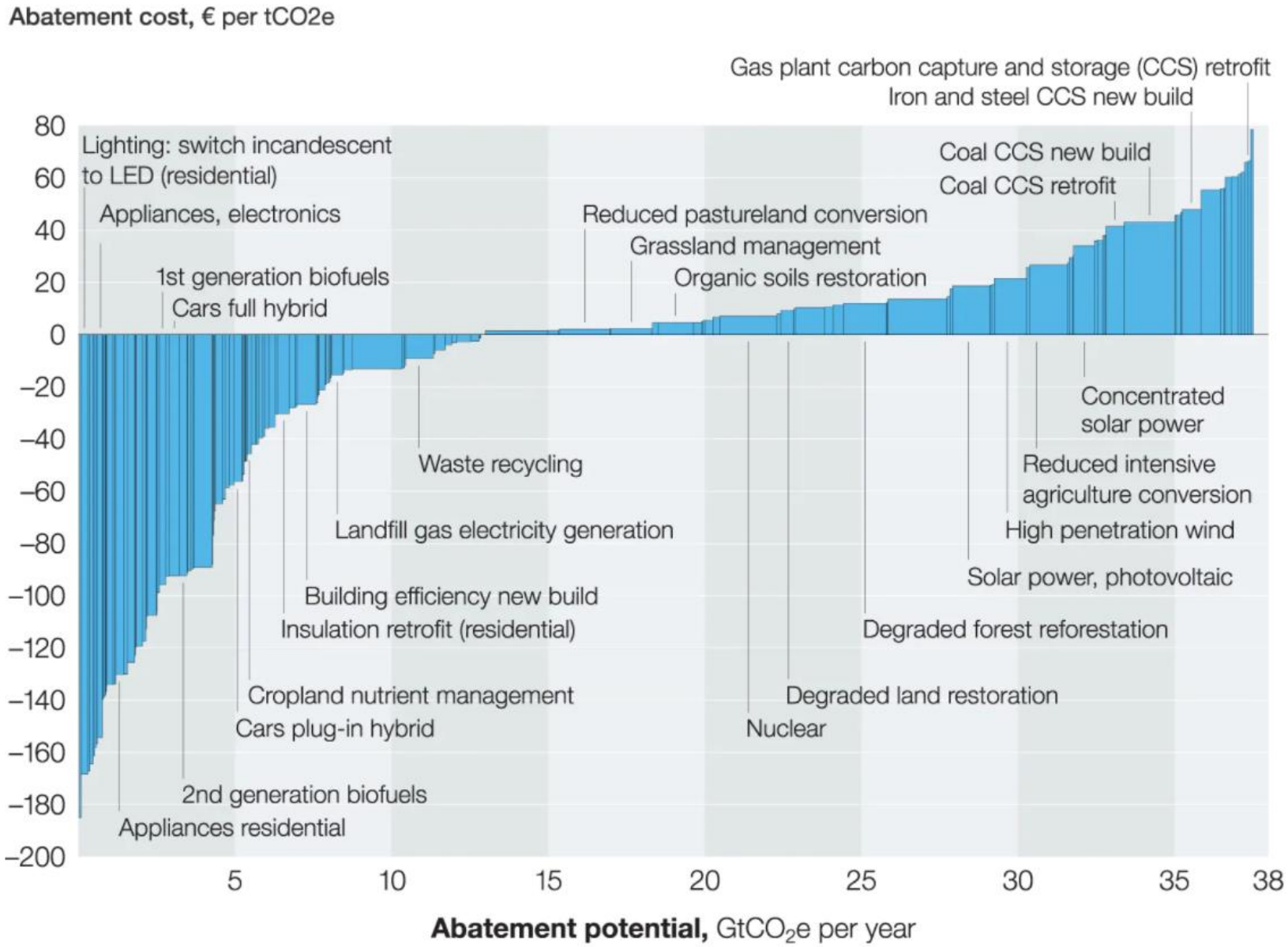
## End of life

- Recycling

# 2.3. COST & IMPACT OF EMISSION REDUCTION ACTIONS ALONG THE JOURNEY

PATHWAY TO SUSTAINABLE DEVELOPMENT

# COST ALONG THE JOURNEY




Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €80 per tCO2e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.

McKinsey&Company | Source: McKinsey Global GHG Abatement Cost Curve v2.1

# III. Case Sharing

## -- Shell Group

## Case Sharing

# Shell Group

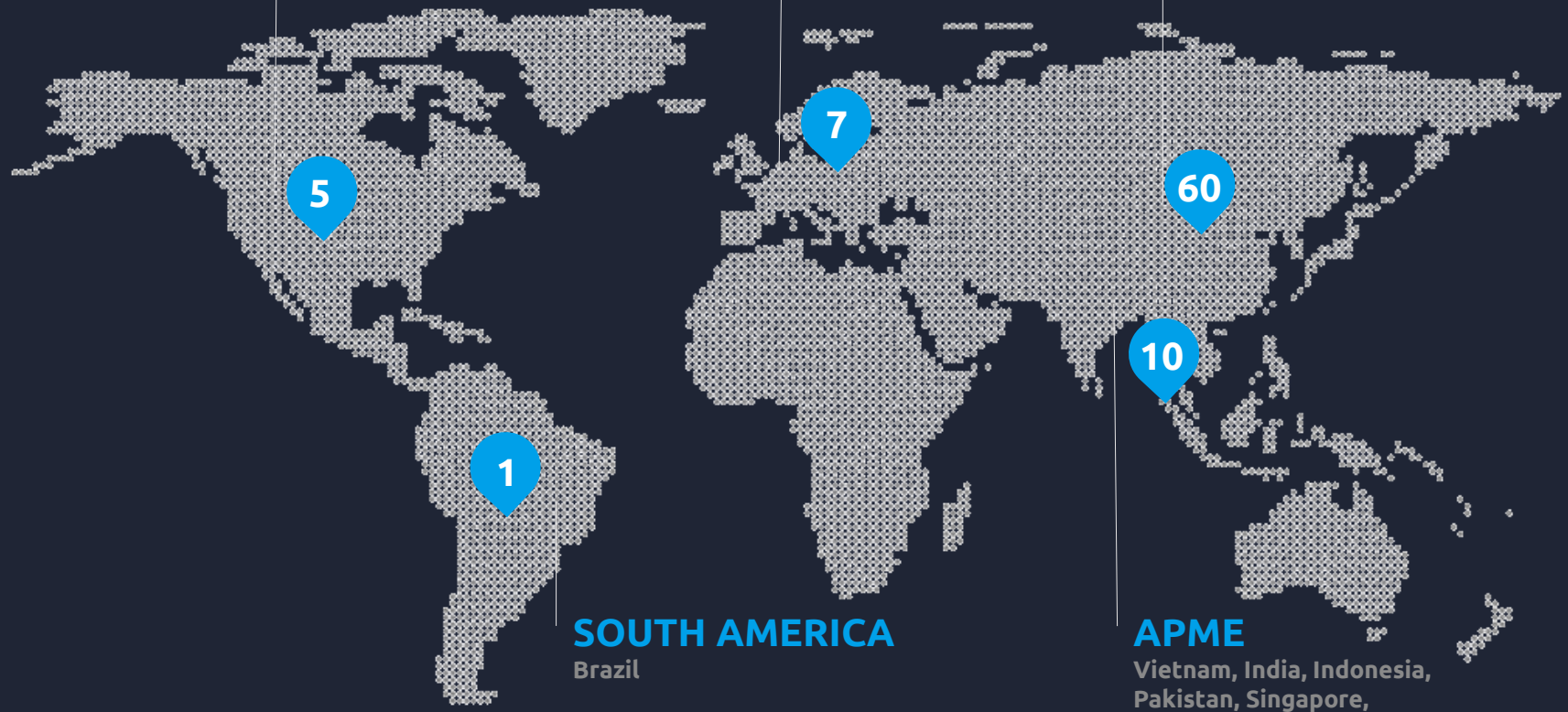
Royal Dutch Shell plc, commonly known as Shell, is an Anglo-Dutch multinational oil and gas company headquartered in The Hague in the Netherlands. It is incorporated in the United Kingdom as a public limited company. It is one of the oil and gas "supermajors", and, measured by 2020 revenues, the fifth-largest company in the world.

Shell aims to achieve net-zero emission by 2050, all production unit are facing huge decarbonization pressure. They are looking for partners who can support them to reduce energy consumption, improve operational efficiency and reduce GHG emission to achieve 2050 ambition.

Customer Sector: Petrochemical
Location: 20+ countries
Hardware: Smart power meter, gas/water/steam/compressed air flow meter
Software Version: Carbon + Energy Management
Deployed Version: Cloud based SaaS
Carbon Emission Scope: Scope 1+2

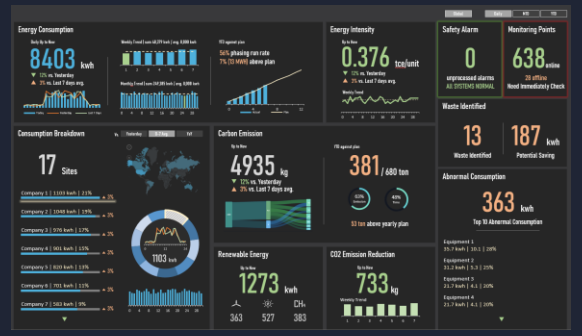
Case Sharing

# Shell Group



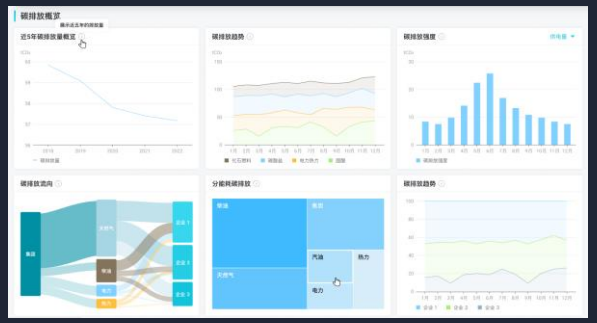
## Case Sharing

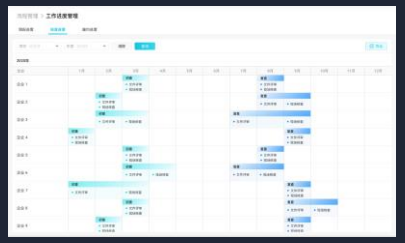
# Shell Group

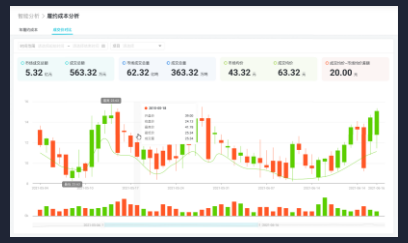


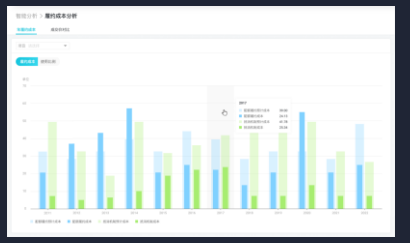








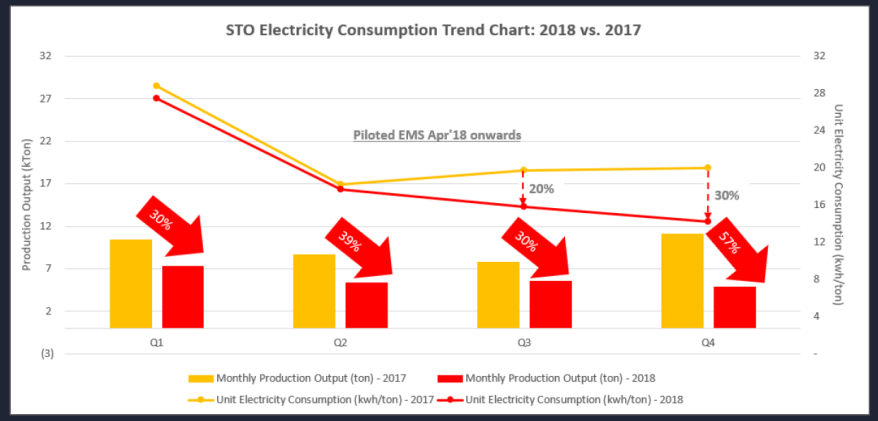


GREEN INVESTING, SUBTAINABLE FINANCE

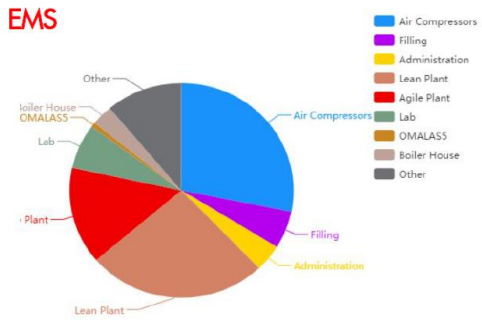
Case Sharing

# Shell Group

## Shell China STO LOBP Unit Production Energy Consumption **Reduced by 30%**



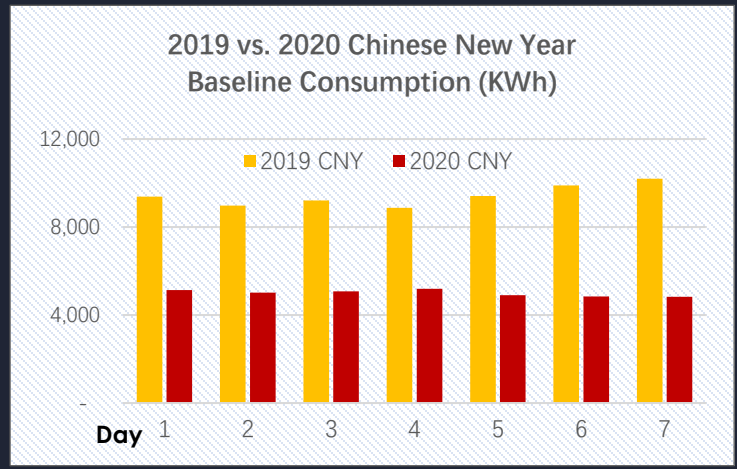

| Saving idea | Type | Saving versus original consumption (%) | Saving versus total electricity use (%) |
|---|---|---|---|
| Replacing air compressors with lower power units | B | 30 | 5 |
| Central air conditioning: automatic control and rearranging working desks | A + B | 10 | 1 |
| Optimising the production schedule for blending and filling | B | 10 | 2 |
| Shutdown plan: checklist for ensuring all unnecessary equipment is switched off | B | 30 | 2 |
| Optimising laboratory power use: resetting the auto-start timing | A | 10 | 0.5 |
| Lighting power control: automatic control | B | 20 | 0.2 |
| Using the EMS and production data to check power use per production volume in daily huddles | C | TBD | TBD |




- Opportunities (Assumption Vs. Real Data)
- Timely Intervene (Monthly Data Vs. RT Data)
- RealTime & Visible Result
- Machine management (Link with maintenance)
- Process Optimization (link with OEE/CPS..)

- Fixed Electricity consumption
  - ➢ Move to Variable content (Air Con.)
  - ➢ Optimize the Fixed (Air compressor)
- Variable Electricity consumption
  - ➢ Optimize the Variable (LED)

## Shell China 2019 vs. 2020 CNY Baseline Energy Consumption **Dropped by 47%**




With the support and application of OCS EMS, ruling out production variance impact (Exclude ZhuHai), for Shell China the average baseline energy consumption during 2020 CNY holiday is reduced by **47%** of that in 2019, which equals to at least **4419 KWh** of saving every day, namely **940,879 KWh** of electricity and **708 tons** of GHG emission reduction every year.

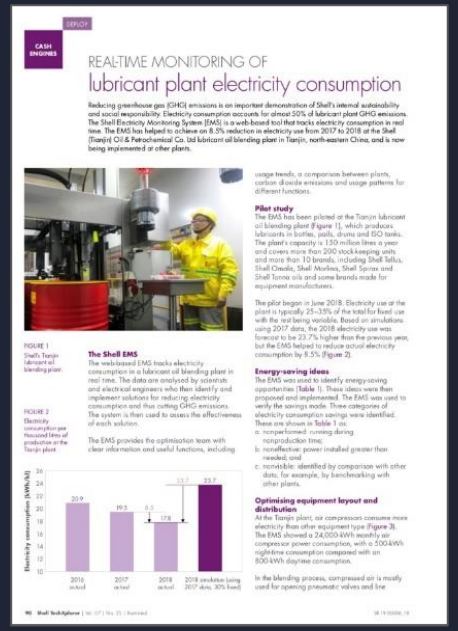
## Case Sharing

# Shell Group

**Jory Richard**

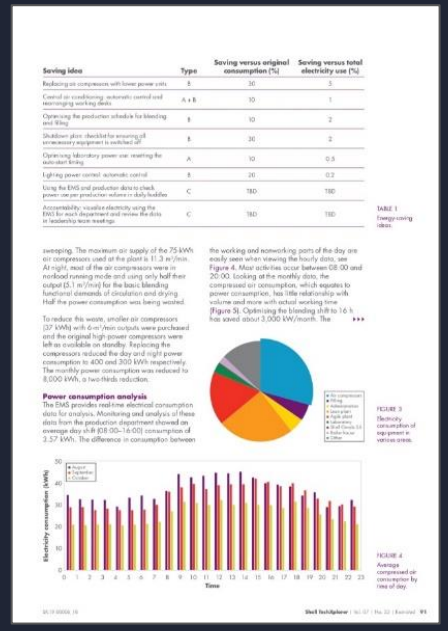
VP of Global Supply Chain

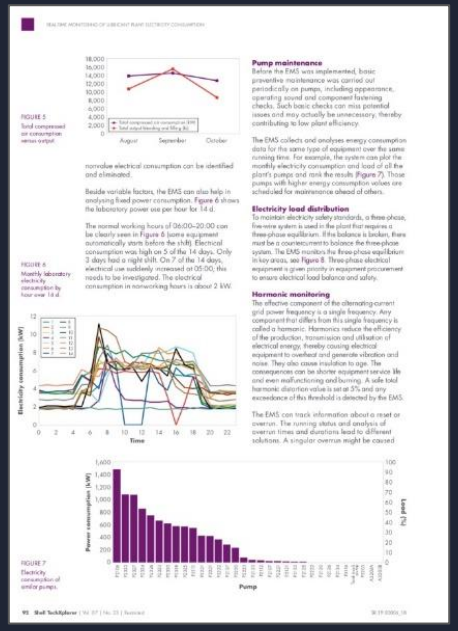
"Really positively surprising results that deliver real **CO2 and Opex savings.** Let's make sure we replicate to other plants across the globe at speed."



REAL-TIME MONITORING OF

lubricant plant electricity consumption





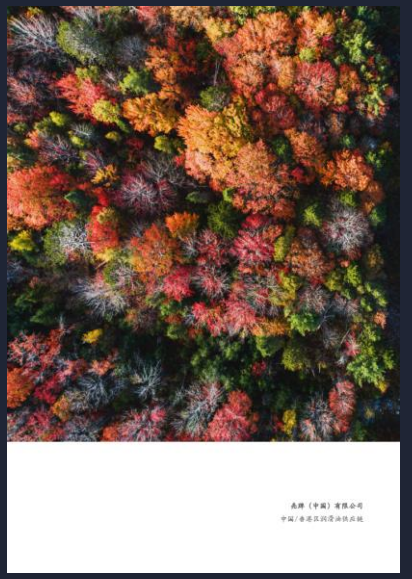
Case Sharing

# Shell Group

## “Shell GC LSC De-Carbonization Best Practice Report”







# IV. How Can MioTech Help You?

MioTech

# Carbon & Energy Management

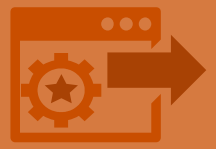
**End to End Carbon & Energy Management Service & Solution**

Consulting

蔚能 · 高瓴资本 Hillhouse Capital · 爱回收 · 易点云 Edianyun.com

Intelligent Platform

vf · VOLVO · Blackstone



Asset Management

爱回收 · MARS Tomorrow starts today

Low-Carbon Solution

Mercedes-Benz · 中国石油 · Sinopec

GREEN INVESTING, SUBTAINABLE FINANCE

# Innovate for a Sustainable Future

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