



Green Hydrogen

International Cooperation, PtX Value Chains & Economic Diversification

Margaret Mutschler

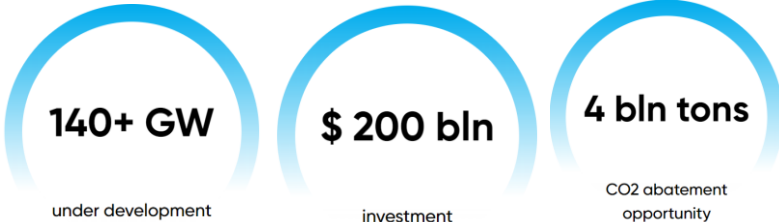
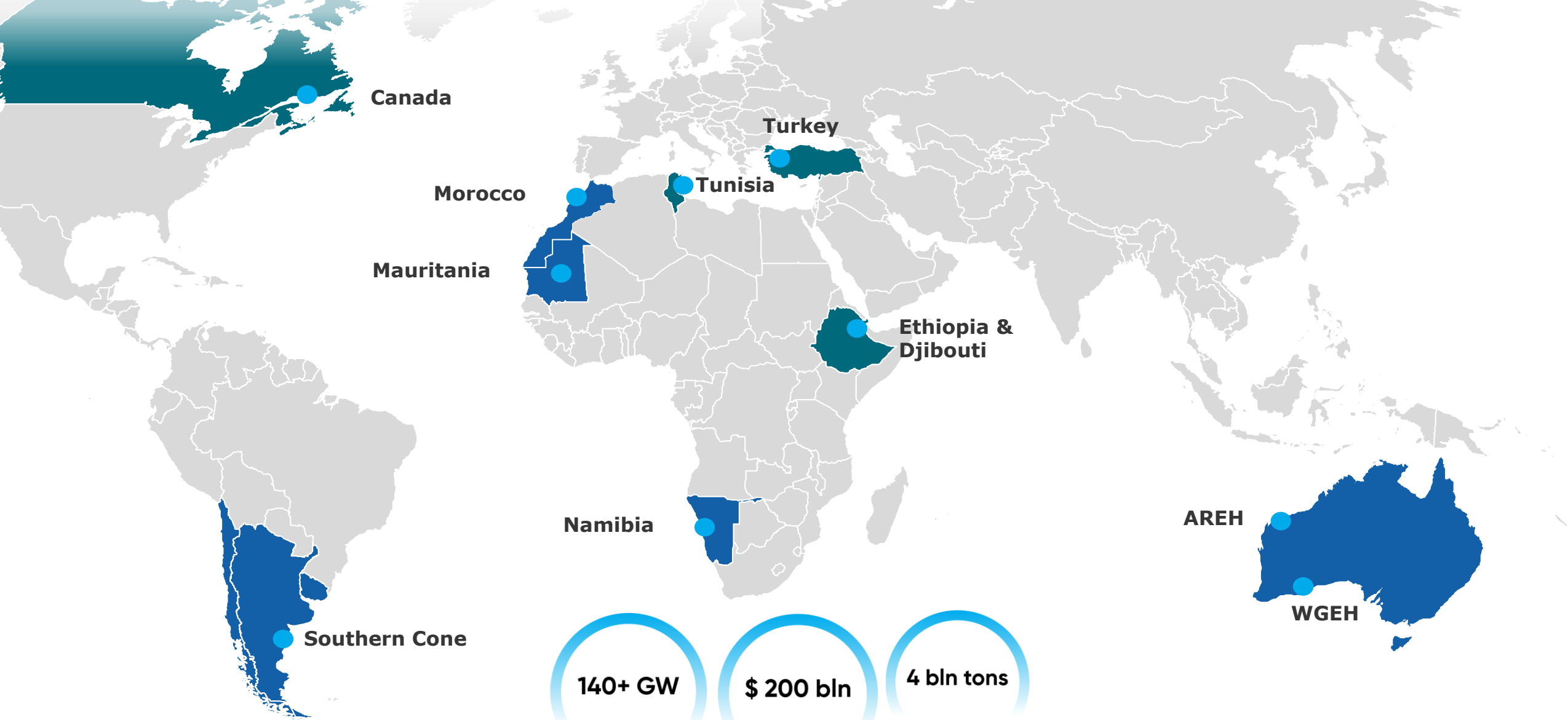
Development Director for Africa

August 2022

OUR GREEN HYDROGEN PIPELINE...



Our geographically dispersed green hydrogen pipeline covers world's cheapest renewable energy locations



CWP H1 - AT A GLANCE

CWP's Green Hydrogen activity is delivered entirely through CWP H1

Early movers on green hydrogen supersites - For the past four years CWP has focused on securing the best real-estate across the globe for GW scale renewables suitable for green H2 production and export

- **A massive pipeline** – CWP H1 as an established portfolio of landmark assets with 120 GW of secured sites
- **Along with further growth opportunity** - in addition, the company has established a further pipeline of approximately 150 GW that offers further geographic diversity

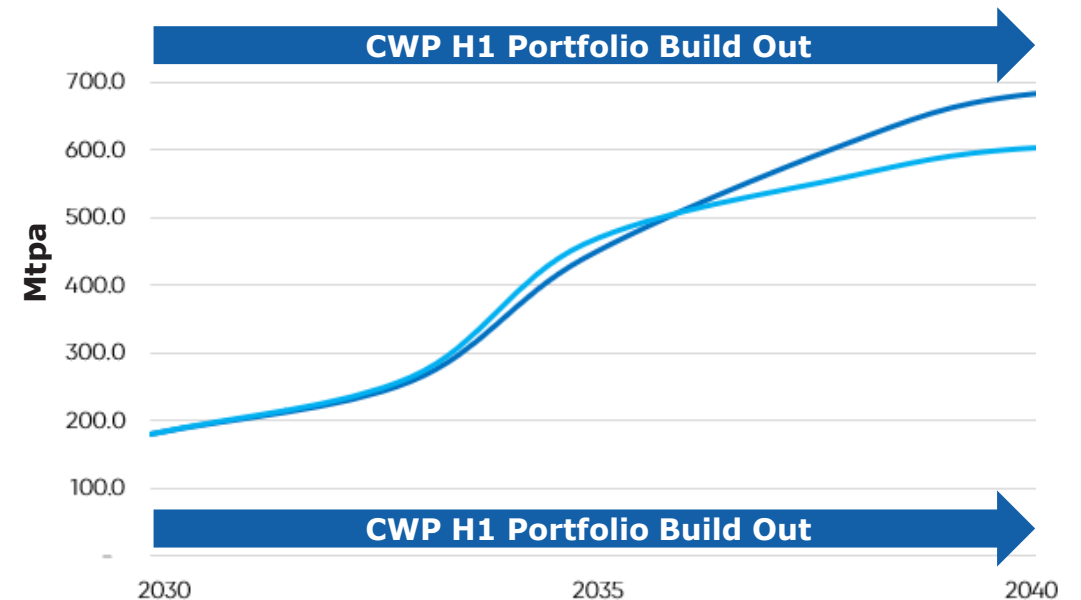
A template frontrunning project – CWP were a founder of the Asian Renewable Energy Hub (AREH). Learnings from this project enhance the speed and reduce the development risk for the rest of the portfolio


Experienced management team with track record - the CWP H1 team is an entrepreneurial team with a track record of delivery. Large scale has been a theme of the team's achievements over the last 15 years, from the largest wind farm in Europe to the largest renewable energy business in Australia as well as founding the worlds first large scale H2 project.

Complemented by locally based development teams and a cohesive central technical team - The group has locally based development teams supported by a senior management team and a technology team structured for pushing projects forward on four continents simultaneously

Long lead time projects but the timing is perfect - the first CWP H1 projects will commence production at the back end of this decade and the build out of the portfolio will continue through the 2030s - the timing is perfect for the ramp up in global demand for green hydrogen and it's derivatives.

HYDROGEN DEMAND FORECASTS



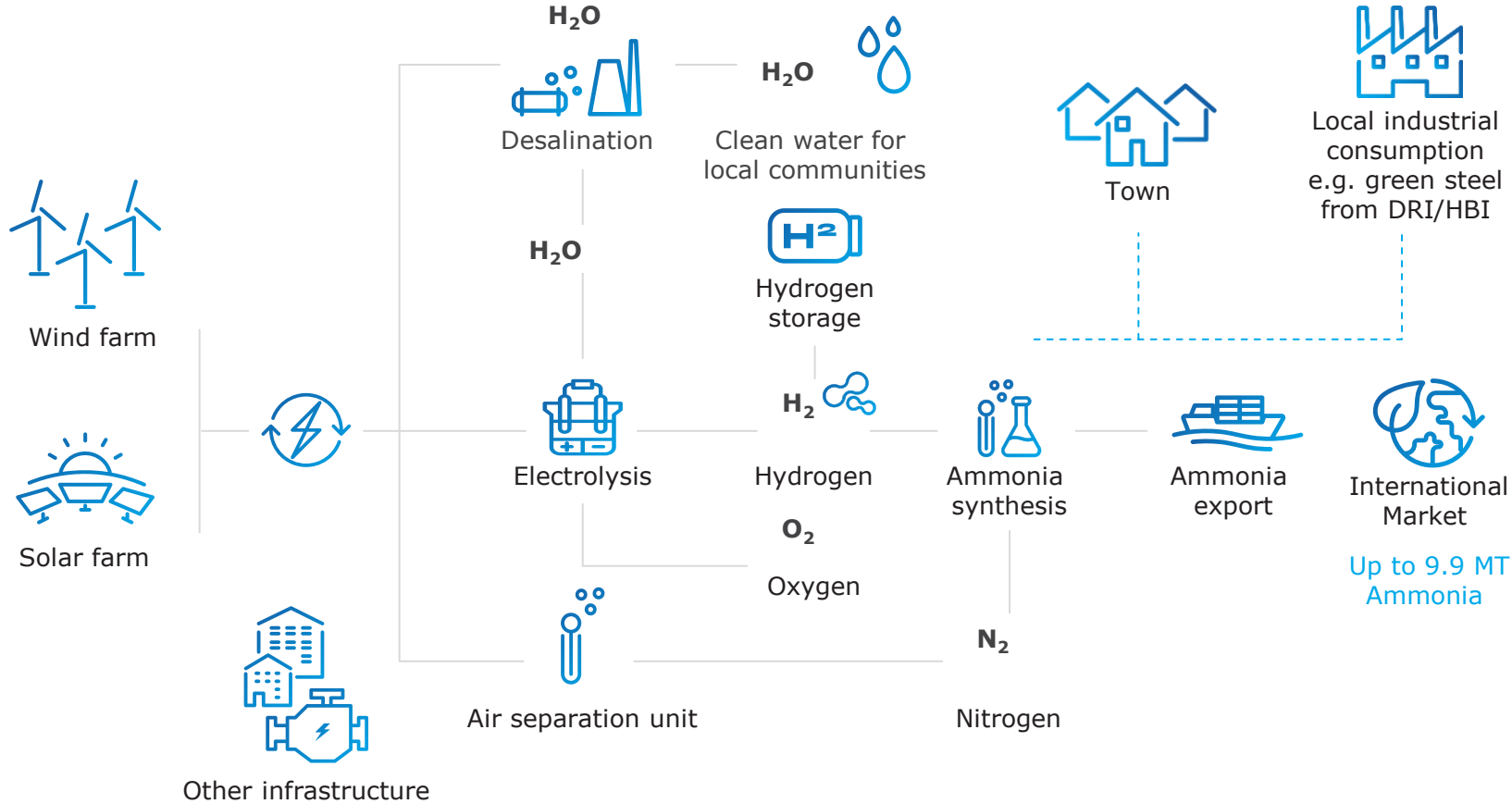
A photograph of a desert landscape featuring large, smooth red sand dunes in the background. The foreground is a flat, light-colored sandy area with several dead, gnarled trees scattered across it. The sky is a clear, deep blue. A thin, horizontal blue line is positioned above the text.

Unpacking the value chain and the supporting ecosystem required for realizing net zero by 2050




PTX INFRASTRUCTURE

Our PtX concept comprises a system of upstream renewable energy generation facilities, downstream production of green hydrogen & ammonia, and export facilities ensuring maximum safety & loading efficiency. This concept is applied to all our projects, and we strive to develop additional revenue streams where possible.

- Wind
 - Solar irradiation
 - Seawater
 - Air
- INPUT**



- OUTPUT**
- Electricity
 - Clean water
 - Hydrogen
 - Oxygen
 - Ammonia

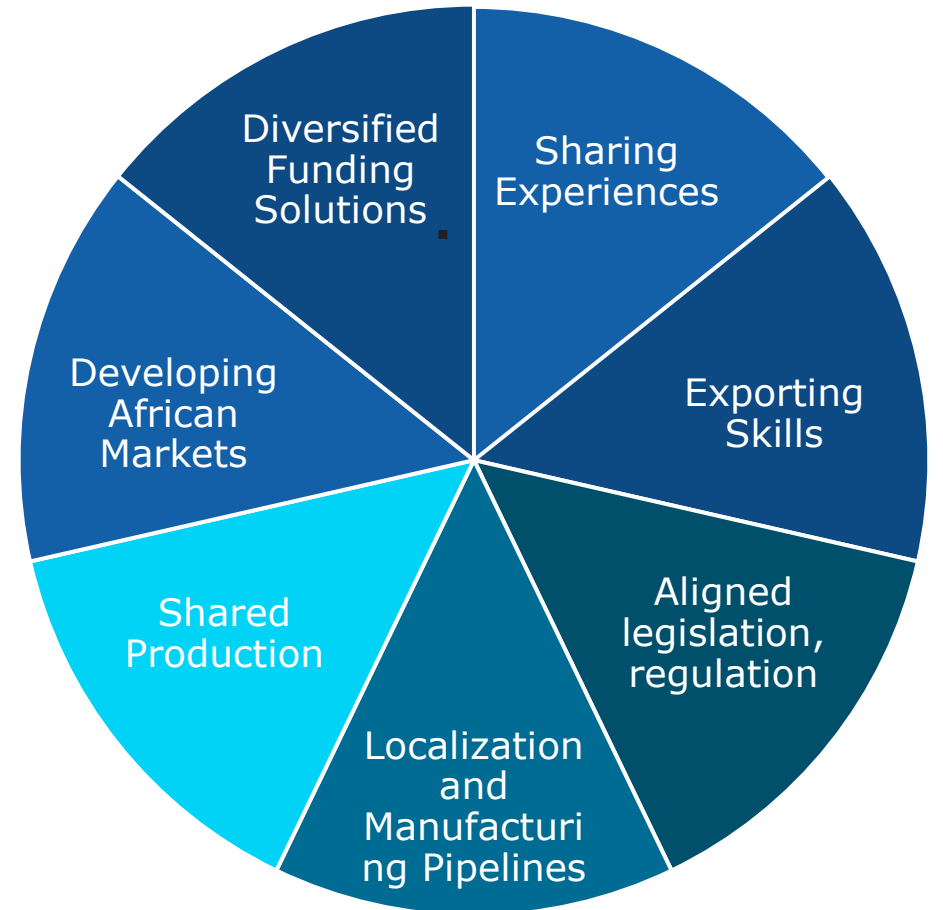
-  Power
-  Shipping fuels
-  Electrification of heavy transport
-  Products

DEFINING THE BRAVE NEW WORLD AS A CONTINENT

Africa needs to train, participate, plan and get ready, become innovative, collaborate

Land	<ul style="list-style-type: none"> • Long-term, certain, sustainable and bankable access to sufficient land
Investment Friendly Decisions	<ul style="list-style-type: none"> • Support in untangling the difficulties for businesses to establish, get licences and permits and timely, efficient and predictable decision making
Flexibility	<ul style="list-style-type: none"> • Openness to accommodate various approaches for both large scale mega projects as well as smaller building blocks
Clear Message	<ul style="list-style-type: none"> • Africa's requirements and ambitions needs to be well formulated and consistently implemented and enforced
Competitiveness	<ul style="list-style-type: none"> • Africa needs to realise that we are competing globally, and need to make sure that projects remains globally competitive
Workforce	<ul style="list-style-type: none"> • Access to a larger skilled workforce and clear labour rules and practices
Business Fraternity	<ul style="list-style-type: none"> • Available local suppliers for goods and services – including financial services, contractors, consultants, insurance, off-takers, etc

Green Hydrogen could be the catalysator in building a solid foundation of a strong African Union



AN ECOSYSTEM OF OPPORTUNITIES

Direct Value Chain Off takers and Opportunities



National and regional grids
Large Scale users
Regional traders
Ancillary Markets



Water supply networks
High Value Agriculture



Mangroves or similar crops



Medical Use
Industrial Use

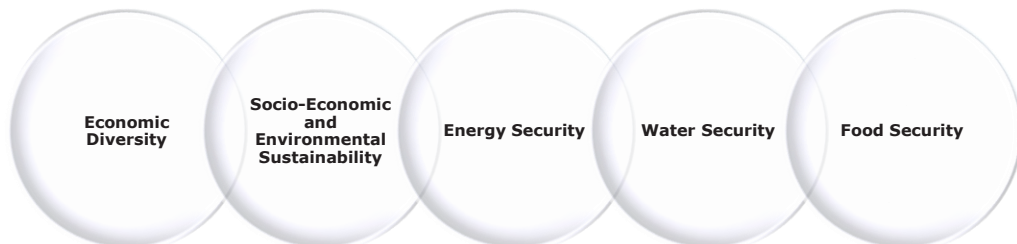


Steel (HBI/DRI)
Power Generation
Bulk Transport
Mining Trucks
Public transport
Rail
Refinery

Methanol
Aviation Fuel
Plastics
Heating
Gas Blending
High Temperature heat



Marine fuel and bunkering
Power Generation
Fertilizer
Explosives



The Supporting Ecosystem

Consultants
Administrative Support Services
Logistics and traveling
Accountants and Auditors
Marketing and Branding
Public Consultation, Awareness
Translation
Theater
Warehousing
IT and Web Support
Modeling and Optimisation
Electrical Services
Substation and Lines
Civil and Buildings
Earth works, trenching and road works
Pipelines
Assembly of trackers/solar parks/WTG
Welding
Contract Management
Arbitration
Project Management
Site supervision
Communication (GSM, etc)
Monitoring

Banking
Accommodation
Tourism
Vehicles Hire
Office Space
Accounting
Conference Venues
Employment Agencies and Advisory
Certification and traceability
Laboratory Services
Legal
Manufacturing
Steel structures and tanks
Cabling
Pre-fab/construction offices and housing
Catering
Storage
Medical Clinics and Emergency
Training
Catering
Mentoring
Tools and Equipment
Security and Safety
Insurance



We need to seek the connections between the dots, to make sure we tap into, explore, and maximise the impact of the development and implementation of this industry on other industries:

- it is an input, an impetus, and we should give it legs and find many houses for it.



Investing in a sustainable future



Margaret Mutschler

Development Director for Africa

margaret.mutschler@cwpglobal