2025 Season

Duqm Now
Leading Change

EVENT REPORT 03

Circular Economy

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We aspire to deliver impact with every post we make

عُمان OMAN

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What Are We Looking to Achieve?

Raise Awareness
Increase awareness of Duqm as an attractive investment destination – providing information on its infrastructure, amenities, incentives, tenants and benefits.

Promote Investment
Attract potential investors from different sectors and from various parts of the world, specifically those who could benefit from Duqm's unique offer.

Network Building
Provide a platform for stakeholders, existing tenants - large and small - potential investors and government representatives to network and build partnerships.

Facilitate Dialogue
Encourage open discussion about the opportunities available in Duqm, facilitate dialogue between businesses, investors, tenants and policy makers.

Showcase Success Stories
Importantly, share success stories of businesses operating in Duqm - showcase the opportunities and growth potential for other prospective tenants.

Knowledge Exchange
Create a knowledge-sharing platform where best practices, regulatory updates and industry trends can be discussed.

Strengthen International Ties
Enhance international ties and foster greater international cooperation by attracting foreign investors and businesses.

Sustainability Focus
Address sustainability issues related to Duqm's operations and highlight the initiatives taken by SEZAD towards eco-friendly practices.

Reserve your seat at
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Session I

7:30pm Wednesday 5 February

Up & Down the Green Stream

Globally, small and medium-size enterprises (SMEs) are playing a major role in the Green Energy sector and enjoying substantial growth. In Europe, for example, SMEs involved in renewable energy projects have increased revenues by an average of 15% annually over the last five years while the global green tech and sustainability market is expected to reach US$139 billion by 2030.

Inspired by this potential, this Duqm Now session will explore the current and emerging renewable energy related opportunities for ambitious Omani SMEs and entrepreneurs in and around the Special Economic Zone at Duqm.
With a special focus on major projects like SEZAD's Integrated Energy Valley, we will cover the role SMEs can play in supply chain management, manufacturing, specialized services and support infrastructure.

Key Discussion Points

1. The role SMEs can play within major projects like SEZAD's integrated Energy Valley from supply chain contributions to providing specialized services.
2. Opportunities created by new technologies and innovative practices in renewable energy.
3. Trends in the global renewable energy market and potential revenue potential for SMEs engaged in renewable energy projects.
4. Duqm's SME support infrastructure and scaling operations within the renewable energy sector.
5. The broader implications of a thriving renewable energy sector on sustainability and community development in Duqm and Oman.

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Session 2

7:30pm Wednesday 16 April

Classroom to Shop Floor: Education-Industry Links in Manufacturing

In accordance with the goals of Oman Vision 2040 and through the roadmap provided by the newly announced Industrial Strategy 2040, government is looking to increase the 9.8% contribution manufacturing made to Oman's non-oil GDP in 2023. The growth of the sector will create thousands of quality, long-term jobs for Oman's youth and central to equipping them with the skills they need to embark on and succeed in these careers will be collaborative University-Industry (U-I) programs. In fact, research suggests companies engaged in U-I arrangements report a 11% higher rate of productivity with the flow of new ideas and technologies from academia to the production floor, significantly boosting competitiveness. For Duqm's tenant community these links have the potential to provide crucial support, enhancing technical capabilities and market responsiveness through access to tailored training programs and research.

This Duqm Now will delve into the fabric of both successful U-I partnerships and apprenticeships, looking at how they can bridge the gap between theoretical knowledge and practical application.

Key Discussion Points

1. Collaboration models between universities and industry, apprenticeships and research.
2. Successful partnerships between manufacturers and universities - case studies, outcomes, best practices and lessons learnt.
3. Gaps in the current skill sets of graduates and how industry input can tailor educational programs to better meet Duqm's workforce demands.
4. The integration of advanced manufacturing technologies into academic curricula and preparing students for the modern manufacturing environment.
5. Funding opportunities and resources available for educational institutions and manufacturing firms to establish and maintain productive partnerships.

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Session 3

7:30pm Wednesday 17 September

Circular Economy: Rethinking Resource Use

The Circular Economy is all about moving away from the traditional, linear "take-make-waste" model and instead keep products and materials in use. For many companies, this shift in thinking may initially seem daunting - after all, some operate on slim margins, limited resources and complex supply chains. By simply reevaluating byproducts and waste streams as potential resources, firms can simultaneously cut costs, generate new revenue and gain a competitive advantage - essentially turning waste from a cost centre into a profit driver.

By embracing the Circular Economy, SEZAD businesses can reap substantial benefits - not just for themselves but also for the planet and its inhabitants.

This third Duqm Now will discuss how embracing circularity in manufacturing is not just a sustainability imperative for SEZAD's community but a high-potential business opportunity. It will look too at what is involved in embarking on this shift, its challenges, support available and rewards.

Key Discussion Points

1. Advanced waste management technologies and practices.
2. Strategies for maximizing resource efficiency in manufacturing processes.
3. Methods for extending the lifecycle of products and their potential impact on Duqm's industrial sector.
4. Opportunities for collaboration between business, government and other stakeholders to promote and support sustainable manufacturing practices in Duqm's industrial sector.
5. Challenges for Duqm-based businesses in transitioning to a Circular Economy model.

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Session 4

7:30pm Wednesday 10 December

A Greener Petrochemical Pipeline

Despite environmental challenges - including greenhouse gas emissions and plastic waste – and pressure from regulators, customers and investors to decarbonize, the global demand for petrochemicals is projected to double by 2050. This anticipated growth, driven by increased population, urbanization and rising living standards, underscores the urgent need for innovative and sustainable practices in the petrochemical industry.

Taking a fresh look at the petrochemical industry, this expert Duqm Now panel will explore the transition to low carbon petrochemicals including innovations such as process optimization, waste heat recovery, the creation of biodegradable plastics and the shift towards a Circular Economy for these products. The conversation will include discussion on the economic benefits and potential for job creation of these approaches. We will also investigate how the petrochemicals industry is evolving in Duqm and what the next steps will be as Oman works towards its 2050 Net Zero Target.

Key Discussion Points

1. The transition to bio-based and renewable feedstocks and decreasing reliance on traditional fossil fuels in petrochemical production.
2. New technologies and methods for enhancing efficiency in petrochemical processes.
3. Strategies to create a more sustainable lifecycle for plastics.
4. Economic benefits and job creation potential associated with implementing sustainable practices within the petrochemical sector.
5. Major industry environmental challenges and strategies to mitigate these impacts as the global demand for petrochemicals continues to rise.

Duqm Now

Showcasing the Real Opportunities Available Right Now on SEZAD

Moderated by
Talal Al Shahri
Director, Specialized Radio Stations
Ministry of Information

Dr. Mohab Al Hinai
VP, Sustainability & Circular Economy,
be'ah

Dr. Aisha Al Sarihi
Economic Advisor
Ministry of Economy

Hussain Al Lawati
CEO
Development Bank

The event brought together business leaders and policymakers to discuss how Duqm might turn a fashionable idea into hard economic advantage. Circularity is more than recycling, it's about designing out waste, keeping materials in use for longer and treating by-products as resources. Pursuing such an approach aligns neatly with the aspirations of Oman Vision 2040, while offering a hedge against the risks of resource dependence. Advocates point to gains that are both tangible and tempting - lower input costs, fresh openings for innovation and a pipeline of jobs in industries that will endure. The harder part, as the Duqm audience acknowledged, lies in changing habits, rewiring supply chains and ensuring young Omanis acquire the skills to make the loop truly close.

What is the Circular Economy?

Dr. Mohab Al Hinai, VP, Sustainability & Circular Economy, be'ah

Most economies still work in a straight line. We take materials from nature, make things, then throw them away. A Circular Economy changes that line into a loop. We design products so they last, we keep them in use through sharing, leasing, repair and remanufacture, then we recycle what is left at high quality. The goal is to cut waste and pollution, keep value in the system and protect nature.

Why This Matters

The world is using more materials than ever, yet recycling and reuse aren't keeping up. Only around 6.9% of the 106 billion tonnes of materials we use each year go back into productive use. Municipal waste could pass 3.8 billion tonnes by 2050. E-waste reached 62 million tonnes in 2022 with just over one fifth recycled in formal systems. Left unchecked, this wasted material would generate 2.6 gigatonnes of carbon emissions every year – that's roughly the same as putting more than 500 million extra cars on the road.

2.6Gt

Of carbon emissions could be generated every year if this waste is left unchecked

There's also a business risk. Prices for key inputs, from rare earths to battery metals, often swing with politics and supply shocks. Circular systems reduce that risk because they rely less on virgin imports and more on local repair, remanufacture and recovery. Investors like that because they can see cash flows and the data. In short, circularity is no longer a niche idea. It's becoming part of market rules and finance.

Circularity is no longer a niche idea. It's becoming part of market rules and finance.

Where Waste Comes From

Questions from the floor on how to tackle waste in the agri-food chain.

Food & Agriculture

Each year the world wastes a vast amount of food. According to the UN the world wasted about 1.05 billion tonnes of food in 2022 at the household, food-service and retail levels - around 19% of food available to consumers, or 132 kg per person. In addition, FAO estimates about 13.2% is lost after harvest and before retail, underscoring that close to a third of global production is lost or wasted across the system.

Food and Agriculture Organization of the United Nations

Food loss and waste are linked to about 8 to 10% of global greenhouse gas emissions. Farming also uses about 70% of the world's freshwater and when food is wasted that water and the fertilizer and energy behind it are wasted too. In many places more than half of the synthetic fertilizer applied isn't absorbed by plants which means it washes into rivers and seas and creates dead zones. In plain terms, food waste is climate waste and water waste. The fix is better planning, smarter portions, separate collection for organics and guaranteed offtake for biogas and compost so food scraps become energy and soil, not methane in landfill.

8–10%

Of global greenhouse gas emissions come from food loss and waste

Fashion & Textiles

Global clothing output doubled between 2000 and 2014, yet garments are worn 36% fewer times. Less than 1% of textiles return as high-quality fibre, while most end up landfilled or incinerated. Washing synthetics alone releases up to 0.5 million tonnes of microfibres into the ocean each year.

France has shown that style can be legislated into sustainability. Its 2020 Anti-Waste Law banned the destruction of unsold stock, promoted repair and placed end-of-life responsibility on producers. In 2024, the Senate went further with penalties on ultra-fast fashion, sending a clear message: hyper-production is unsustainable. At the same time, Paris has convened The Fashion Pact and backed recycling plants to handle blended textiles at scale.

Hyper-production is unsustainable.

The takeaway for Oman? Circular practices are opportunity spaces. Designing for durability, offering repair and resale and avoiding hard-to-recycle blends open new business models. For MSMEs, from textiles to electronics, leading in eco-innovation means offering customers choices that don't cost the earth.

Plastics & Packaging

In 2024, the world generated 220 million tonnes of plastic waste – that's 28 kg for every person on the planet. Of that, 69.5 million tonnes were mismanaged and leaked into nature. The oceans alone took in 11 million tonnes - a flow on track to nearly triple by 2040 without action. Packaging drives the problem, making up about 40% of all plastic waste. Recycling lags far behind with just 9% of plastic waste recycled. For packaging, just 14% is collected and only 2% returns as same-quality material. The solutions are proven. Deposit-return systems recover up to 90% of beverage containers. Mono-material designs make recycling cleaner and more effective. The goal isn't to recycle more low-grade plastic it's to use less plastic in the first place and keep what we do use in clean, closed loops enabled by good design and high return rates.

Packaging drives the problem, making up about 40% of all plastic waste.

Electronics

E-waste is the world's fastest-growing waste stream. In 2022 we generated 62 million tonnes, but only 22.3% was properly collected and recycled. That left an estimated US$62 billion worth of recoverable materials unaccounted for and the total is on track to hit 82 million tonnes by 2030 without stronger action. What to do? Design devices to be repairable, keep spare parts available, scale trade-in and refurbishment and tightly control hazardous fractions so nothing dangerous leaks into the environment. UN agencies highlight that e-waste recovery currently meets 1% of rare-earth demand, underscoring the opportunity.

1%

Of rare-earth demand is met through e-waste recovery, underscoring a major opportunity

Construction & Heavy Materials

Cement and concrete are carbon-intensive - about 2.7 billion tonnes of CO_2 in 2022 from roughly 4.4 billion tonnes of cement. Steel is another major source, responsible for around 7% of global energy-system CO_2. Aluminium, by contrast, has a stronger circular story because recycling saves about 95% of the energy versus primary production - but only if scrap is captured and sorted well. To keep value in play, treat buildings as material banks. A material passport is a simple digital record of what a building contains - products, components, materials, quantities, locations and how to disassemble them so parts can be safely reused, resold or recycled at quality later. What's the circular fix? Design for long-life and adaptability, reuse structural members where it's safe to do so and require material passports so future teams can harvest components and sell them at value instead of crushing them into rubble.

Building a Circular Future: Reducing CO_2 with Durable Design, Material Passports, and Recycling.

What Governments Are Doing

Dr. Aisha Al Sarihi, Economic Advisor, Ministry of Economy

Across the world, governments are moving from words to regulation. The common pattern is simple - set clear roles, make data visible and pay for verified results. That's what gives investors confidence and pushes companies to design better products.

Digital Product Passports

The EU's Ecodesign for Sustainable Products Regulation (ESPR) took effect July 2024. It creates Digital Product Passports (DPPs) that will roll out product-by-product. In parallel, the Battery Regulation brings a digital battery passport from February 2027 for EV, light-transport and industrial batteries over 2 kWh. Most passports will be accessed via a QR code on the product.

The result: Passports make the inside of a product visible - what it's made from, how easy it is to repair and how much recycled content it contains. Exporters into the EU will need clean bills of materials, repair documentation and data systems to prove what they claim. The upside is better traceability, easier resale and over time lower compliance risk.

Anti-Waste Law and Repairability Labels

France's Anti-Waste for a Circular Economy Law (AGEC) bans the destruction of unsold non-food goods; they must be reused, donated or recycled. The law also introduced a repairability index (0–10), first applied in 2021 to phones, laptops, TVs, washing machines and lawnmowers, with scores based on spare-part availability, documentation and ease of disassembly.

The result: Shoppers can compare repairability at a glance. Brands that design for repair score better and win trust. The policy has channelled more money into repair services and the second-hand market, creating local jobs while cutting waste.

Smart Pricing for Food Waste

South Korea uses RFID "pay-as-you-throw" bins to charge households by weight. Landfilling food waste has been banned since 2005. The system achieves very high capture—over 90% separated nationally, with >95% recycling cited in policy briefs because people see the cost, rules on contamination are strict and feedback is fast.

The result: Clean organics flow to composting and biogas, cutting methane and creating useful outputs for farms and energy systems. Cities get better results at lower long-term cost than building more incineration.

Home Appliance Recycling That Actually Works

Under Japan's Home Appliance Recycling Law, retailers must take back old appliances, manufacturers must recycle them and consumers pay a fixed fee that's tracked with a recycling coupon. Results are steady and transparent. In FY2021, recycling rates beat legal targets—for example air-conditioners at 92% (target 80%) and washing machines/dryers at 92% (target 82%).

The result: Everyone knows their role, so plants receive predictable feedstock and can invest in better recovery. Design also improves over time because producers are responsible for end-of-life outcomes.

Deposit-Return That Delivers Clean Loops

Finland's national deposit-return scheme, run by PALPA, consistently tops 95% return rates. In 2022 it recovered 99% of cans, 90% of PET bottles and 98% of glass; overall performance rose to 97% in 2023.

The result: High return rates keep aluminium and PET clean enough for true closed-loop recycling. That gives packaging makers a reliable supply of quality recycled material and cuts the need for virgin inputs.

What Cities are Doing

Conversation turns to community participation as a driver of circular change.

Across cities, the pattern is the same - set clear roles, make it easy for people to do the right thing and publish results. Here are five cities showing how that works in practice.

Milan: Food Waste

Milan built a city-wide service for food scraps - kitchen caddies for homes, frequent collection, strict quality checks and clear reporting. It now captures about 110 kg of food waste per person each year and sends roughly 130,000 tonnes annually to anaerobic digestion and composting, with contamination around 4% - good enough to make clean biogas and soil products.

Why it works - simple tools at home, high collection frequency and feedback loops that keep contamination low. Investors like the steady tonnage and verifiable methane cuts.

130K tonnes
processed annually

Amsterdam: Treating Buildings as Material Banks

Amsterdam's circular strategy aims to halve the use of virgin raw materials by 2030 and become fully circular by 2050. The city has run material-passport pilots with public buildings and is developing circular criteria in tenders so new projects record what materials are used and how they can be taken apart and reused.

Why it works - a passport turns a building into an inventory. When you know what's inside and how to disassemble it, components can be resold at value instead of crushed. That clarity lowers risk for lenders and salvagers.

Rotterdam: Hub that Turns By-products into Business

Rotterdam converted an empty riverside leisure complex into BlueCity, a circular incubator now home to dozens of entrepreneurs sharing labs, workspace and, crucially, each other's by-products. The cluster effect - "your waste is my feedstock" - shortens supply chains and keeps materials in use locally.

Why it works - co-location and light-touch infrastructure make it easy for start-ups to swap heat, materials and equipment, while the city's broader circular procurement push helps create a market for their solutions.

Kalundborg, Denmark: Industrial Symbiosis at Scale

Kalundborg's network of firms trades steam, CO_2, gypsum, water and residuals under long-term contracts. The system avoids 586,000 tonnes of CO_2 a year and saves 4 million m^3 of groundwater by switching to surface water - hard numbers that have made the model investable for decades.

Kalundborg SYMBIOSIS

Why it works - simple bilateral contracts, clear quality specs and pipes that move resources like a utility. Everyone can see the flows and the savings.

Singapore: Tuas Nexus One Site do Many Jobs

Singapore is co-locating a new Integrated Waste Management Facility with the Tuas Water Reclamation Plant so biogas, heat and nutrients move around the site. The project is designed to be energy self-sufficient and is expected to save over 200,000 tonnes of CO_2 each year.

Why it works - putting water and waste together cuts trucking and energy use and builds a single, metered flow of resources that can be financed like infrastructure.

◆ Tuas Nexus, Singapore

Duqm's Edge

Attendee asks about scaling recycling, reuse and circular design.

Duqm already has the right kit in place - the OQ8 refinery at 255,000 barrels a day, a deep-water container terminal with more than 1,000 metres of quay, a 600,000 DWT dry dock, desalination and wastewater treatment and a growing green hydrogen industry. Oman produces around 2.0 to 2.6 million tonnes of municipal waste each year which is enough to support organics to biogas, plastics recovery and metals recycling if separation quality and long-term offtake are locked in.

Think of Duqm as one connected machine, not lots of separate plants. Spare heat and steam from one factory can run the next one. Clean CO_2 can be piped into rooms where new concrete is hardening; the gas turns into stable minerals inside the concrete, making it stronger while locking the carbon away. Oxygen from hydrogen plants - electrolysers that split water - can support fish farming and other processes that need pure oxygen. The salty water left after desalination (brine) can be used to recover minerals instead of being dumped. Around the port, a repair-and-remanufacture hub can upgrade ships, refurbish refrigerated containers and certify pumps and heating-and-cooling equipment - with warranties so buyers trust the products.

2.0–2.6M tonnes
Of municipal waste produced annually in Oman

What Can Duqm Do? Some Ideas

Require Material Passports + Disassembly Plans for New Buildings What it is? Every new commercial/industrial building must list what's inside - products, components, quantities, where they are and how to take them apart safely.

Impact? Turns buildings into "material banks" with resale value at end-of-life, cuts demolition waste, lowers future refurbishment costs and gives lenders better data on assets.

Map Shared Flows Between Sites

What it is? Draw a simple map of where heat, water, CO_2, oxygen, brine and by-products are produced and where they're needed across the refinery, dry dock, electrolysers, desalination and the port. Convert those links into service contracts with quality and availability standards.

Impact? Lowers energy and water bills, reduces emissions and creates predictable, utility-style revenues that make investors comfortable funding the pipes and equipment.

Build a Kitchen-to-Plant Food-Waste System

What it is? Give households and businesses clear food-scrap bins; collect often; charge fairly for the small "residual" bin - pay-as-you-throw - enforce low contamination; sign long-term offtake for biogas and compost.

Impact? Cuts methane from landfill, produces local energy and soil nutrients, keeps streets cleaner and creates steady feedstock so organics plants can be financed.

Right-to-Repair Scores + Take-back for Electronics Appliances

What it is? Show a simple repairability score at the shelf, require retailers to stock key spare parts and make them take back old products for certified repair or recycling.

Impact? Products last longer, households save money, e-waste drops and a local repair/refurb market grows - supporting jobs and supplying quality second-hand equipment.

Make Repair & Remanufacture Core Port Business

What it is? Set up certified lines to retrofit ships, remanufacture refrigerated containers and rebuild pumps, HVAC and marine equipment, backed by warranties.

Impact? Keeps assets in service longer, reduces import dependence, speeds turnaround for regional customers and creates skilled, exportable services anchored in Duqm.

Use Procurement & Offtake to Pull the Market

What it is? Write a circular procurement code so public and anchor buyers set recycled-content floors and modular design rules for construction materials, electronics and packaging. Create an offtake + credit-enhancement platform so government and large tenants guarantee demand (and minimum prices) for recycled plastics, compost and recovered metals. Publish simple design standards (durability, material health, separability) so suppliers know the rules on day one.

Impact? Products last longer, households save money, e-waste drops and a local repair/refurb market grows - supporting jobs and supplying quality second-hand equipment.

What Can Communities Do?

◆ Talal Al Shahri Director, Specialized Radio Stations, Ministry of Information

Schools
Can lead - let students run repair days, separate food scraps and track their neighbourhood's progress. Share results through school e-newsletters, classroom briefings, notice boards and parent WhatsApp messages. Celebrate wins with certificates or small grants for student teams and make steady improvement a point of local pride.

Households
Can sort food waste at home with small caddies. Make collection reliable and frequent so sorting feels worthwhile. Use clear signs and simple instructions in Arabic and English. Give quick e-wallet refunds for bottle and can returns. Put small drop-off points for e-waste and repair pick-up at supermarkets and port gates.

Retailers
Can show repairability scores at the shelf, stock spare parts for popular items and host weekend pop-up repair counters.

Restaurants & Food Courts
Can switch to durable serviceware where practical and put return points within easy reach of tables.

Community Groups
Can run monthly repair cafés with tools, a small grant for parts and basic training so more people learn to fix things safely.

Service Providers
Can rethink offers.
Sell lighting hours rather than light fittings, cooled air rather than chillers, uniforms with wash and repair rather than one-off sales. These service models make it natural to collect products back, refurbish them and reuse parts.

This transition won't work without people, so it has to be easy and visible.

Finance & Banks

Hussain Al Lawati, CEO, Development Bank

Circular businesses are starting to look like utilities. They earn steady service fees for collecting materials, running sorting lines, operating shared pipes and keeping equipment humming. New rules - producer responsibility, repair labels, digital product passports - create demand that doesn't vanish with the next trend. And the data is finally good enough to prove results. Less hype, more meters and dashboards. That's catnip for lenders.

Three Ways Money Flows

Concessions
Think of pipes and plants as a single service company. One operator owns shared infrastructure - CO_2 and oxygen lines, chillers, digesters, steam loops - and gets paid for availability and quality, the same way a water or district-cooling concession is paid.

How this shows up?
European development lenders have been backing city programs that fund sorting centres, anaerobic digesters and heat networks under long-term contracts. In the private market, waste operators sign multi-year service deals with cities and industrial parks to supply clean materials and biogas.

Why banks like it? Contract-backed cash flows, indexed to inflation, with penalties for downtime and bonuses for hitting quality standards.

Performance-linked Loans
These are standard loans where the interest margin moves with a few simple KPIs - think higher return rates, more recycled content, lower contamination, or fewer tonnes to landfill.

How this shows up? Large international banks now offer sustainability-linked loans to retailers and manufacturers if they publish targets and let an auditor verify results. Public lenders - EIB, IFC, EBRD and others - often add longer maturities or partial guarantees so projects clear investment committees.

Why banks like it? The incentive is built into the pricing and the data trail is auditable.

Bonds & Pooled Fees
Green bonds fund the heavy kit - sorting lines, organics plants, material recovery upgrades -under clear "use of proceeds" rules. Producer-responsibility and deposit-return schemes generate steady fee streams that can be bundled and financed, much like utility bills.

How this shows up? Recycling companies issue green bonds to expand plants; beverage container systems use deposits and producer fees to pay for logistics and high-quality reprocessing.

Why banks like it? Large, repeatable programs with tonnes-in/tonnes-out reporting.

What Returns Look Like

Base case
Stable service fees for collection, sorting, heat/steam/CO_2/oxygen supply and plant availability.

Upside
Sales of clean materials - rPET, aluminium, paper fibre, metals - biogas, compost, heat.

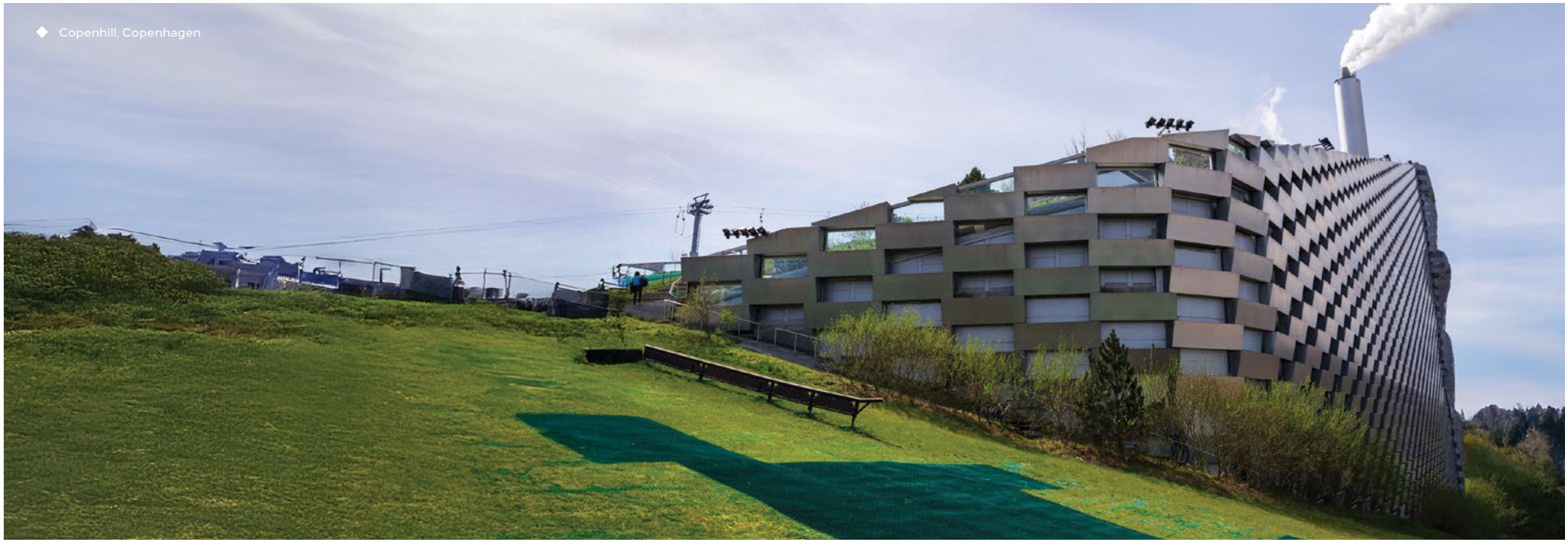
Risk controls
Quality specs in contracts, minimum price floors for secondary materials, take-or-pay offtakes and independent measurement. Publish the numbers and the debt follows.

Real-world Examples
City circular programs in Europe package multiple projects - sorting, organics, heat networks - under a single financing framework so money can be drawn down as milestones are met.

Brand-side loans link pricing to packaging KPIs: more recycled content, fewer single-use formats, higher take-back rates. When targets are hit, interest falls.

Recycling pure-plays regularly tap the green-bond market to add capacity; investors get a simple report: tonnes received, contamination levels, tonnes sold back into high-quality uses.

Deposit-return systems fund themselves through deposits that aren't claimed and producer fees, creating predictable cash flows to finance reverse-logistics and sorting.


Copenhill, Copenhagen

Things to Measure

Discussions focus on green finance advancing circular industries.

Plans don't change anything, measurement does. When numbers are public and simple, services get better and money shows up. Proof is everywhere - in 2022 the world wasted about 1.05 billion tonnes of food - roughly 19% of what reached consumers. Cities that measure and publish their capture rates have cut that waste and financed new plants. Here's the playbook Duqm can run.

How Much Comes from Second-hand Materials

Start with the inputs. What share of your feedstock is recycled or recovered rather than virgin? It's the cleanest test of circular progress. Europe is already pushing hard- PET drinks bottles must average 25% recycled content by 2025 and 30% by 2030 - so suppliers that can prove high recycled content win orders. Make the number visible on product specs and tenders.

How Much Virgin Material per Unit of Product

Publish kg of virgin material per unit - per pallet, per container, per square metre of panel. It lets firms compete on efficiency, the same way they compete on cost and quality. Over time, that single number drives design changes - lighter formats, modular parts, fewer blends that can't be recycled.

Food Waste: Capture & Cleanliness

Two numbers matter for organics - how much you collect per person and how clean it is. Milan shows the benchmark - 110 kg per person per year with 4% contamination, enough to run digesters smoothly. South Korea's smart-bin system separates over 90% of food waste nationwide with >95% recycled in top districts. Hit those levels and biogas, compost and finance follow.

90%

Of food separated by South Korea's smart-bin system

Packaging: Return Rates & Closed-loop Yield

Measure return rates for deposit-return - cans, PET, glass - and the share that goes back into same-quality uses. Finland's scheme is the reference point, 97% overall return - cans 99%, PET 90%, glass 98%. At those rates, materials stay clean enough for true closed loops.

Repair, Reuse & Remanufacture

Track how many items you keep in service and for how long - units repaired or refurbished, average life extension and warranty performance. France made this simple by adding a repairability score (0–10) on common electronics - easy to read, easy to audit. Duqm can require the same score in retail and tenders.

Buildings As Material Banks

Require material passports for new commercial and industrial builds - a basic digital record of what's in the building, where it is and how to take it apart. Add a disassembly-time index - how many hours to recover key components safely. Passports turn demolition into de-construction with resale value, not rubble.

Public Dashboard

Tie data to the real world: weighbridges, flow meters and QR-coded passports. Then publish a quarterly dashboard that citizens and lenders can read in a minute - tonnes in, quality out, uptime, biogas and power produced, materials sold, jobs supported.

What this Means for Exporters & Investors

Smart, sustainable, circular - key pillars for growth in Duqm

Exporters are already moving because the rules are changing. In the EU, beverage bottles must hit 30% recycled plastic (rPET) by 2030 with 90% collection targeted by 2029. Brands are adjusting fast. For example, Coca-Cola Europacific Partners reported 53% rPET in its European PET bottles back in 2021, helped by high-quality feedstock from deposit-return schemes such as Finland's which now returns 97% of cans, PET and glass.

Coca-Cola EUROPEAN PARTNERS

Electronics exporters are being pushed toward repair. France's repairability label (0–10) forces brands to publish how easy a product is to fix, some have leaned in-Fairphone 5 scored 10/10 on iFixit and promises long software support to keep phones in use. Expect more buyers to ask for take-back and spare-parts plans in tenders.

Automotive exporters are hard-wiring circular content. Volvo aims for 25% recycled or bio-based plastics in new models by 2025 and Renault's Re-Factory (Flins) is scaling reuse and remanufacture, with plans to retrofit up to 120,000 vehicles per year by 2030. Designing for disassembly is now standard practice, it protects resale value and reduces compliance risk.

25%

Of plastics in Volvo's new models will be recycled or bio-based by 2025

VOLVO RENAULT

Investors are financing the pipes and plants behind this change. The European Investment Bank backed Renewi with US$42.8 million for hi-tech sorting and biogas capacity in Belgium/Netherlands. IFC lent US$200 million to Indorama Ventures to expand food-grade PET recycling in Asia.

Operators are also tapping markets directly, SUEZ issued a US$535 million green bond - 5.5× oversubscribed - and Paprec raised US$642 million to build out recycling infrastructure. These are utility-style cash flows - contracted services with tonnes-in/tonnes-out reporting.

In Duqm, future tenders may begin to request digital product passports, repairability scores and take-back plans. For packaging and parts, regulators could set hard targets on recycled content and minimum durability. Suppliers that publish a clear materials inventory and design products for disassembly would be well placed to recover value at end-of-life and to navigate due diligence smoothly.

On the finance side, contracts may increasingly be designed to pay for measured outcomes - per tonne of clean organics delivered, per container refurbished, per bottle returned - with mechanisms such as price floors for secondary materials to stabilize revenue when markets dip. Capital is expected to be ring-fenced and independently audited, creating structures that banks trust and that can enable scale

Skills Gap

Salim Qatan, Director, Support Services Department, SEZAD welcomes attendees

A Circular Economy may be the future, but the skills gap is pulling hard on the handbrake. The ILO estimates 100 million new jobs could be created globally by 2030 through the transition, yet a recent OECD survey found that only 20% of workers feel they have the competencies to thrive in greener, more resource-efficient industries. In the EU alone, the Commission warns of shortages in recycling specialists, repair technicians and materials scientists, roles that are already in short supply. The remedy lies not just in more training, but in faster retooling - aligning vocational programs and business incentives with the circular model and forging public-private partnerships that can scale-up reskilling at pace. Without this, the risk is less a shortage of capital than a shortage of capable hands.

100mn
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ILO

20%
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OECD

Final Word

What once looked like a design principle is becoming a practical test of who sells into premium markets and how cities deliver services. With regulators tightening standards - the EU will require digital product passports across many sectors by 2026 - the rules are already clear. For Duqm, the opportunity is to lead - provide reliable services, publish the data and sign contracts that pay for verified results. Do that and circularity becomes daily practice. The payoff is a durable, low-waste economy and a reputation for reliability in the low-carbon transition.

Quarrying a Place in the Circular Economy

Eng. Ibrahim Al Hasni
Managing Director
Duqm Quarries SAOC

The Circular Economy usually conjures up images of recycling bins and household waste. Can a quarry really play a role?

It can and it must. In quarrying, the principle is simple: nothing should be wasted. What looks like a by-product to us can become raw material for another industry. Water is reused. Transport is streamlined. If we see ourselves as part of an industrial ecosystem rather than a lone operator, we create value without the waste.

Some argue the energy transition can be fueled entirely through recycled minerals. Your view?

Recycling will help, but it won't be enough. Even the IEA warns of shortages. The real challenge is to make every tonne extracted count - handled with precision, minimizing waste and ensuring it can re-enter the cycle later in its life.

The mining sector produces billions of tonnes of waste annually. How do you avoid contributing to that pile?

By rethinking waste. Offcuts become inputs for construction. Water is used again and again. We track energy intensity and emissions to see where we can improve. It's about keeping materials circulating, reducing what's lost and backing it all with data.

Investors are getting tougher – demanding numbers, not promises. Has this pressure changed your operations?

Absolutely. We're asked for data on emissions, water use, efficiency. That scrutiny is good. It forces sustainabilityinto daily operations instead of leaving it as a footnote. Done well, it makes us more competitive.

Customer expectations are changing too. What's new?

Ten years ago, sustainability was seen as an optional extra, nice for branding. Today, it's non-negotiable. Contractors and clients are asking tougher questions about the carbon footprint of materials, the reuse of water and whether logistics align with emissions targets. If suppliers can't provide credible answers, they risk being overlooked. That pressure from the marketplace now sits alongside regulation as a key driver of change, pushing the industry to rethink product specifications – from lighter mixes to recycled content – and to prepare customers for a future where sustainability shapes the standard offering.

What does innovation look like in a quarry?

It's not headlines or gadgets. It's planning extractions more precisely, collaborating with nearby industries and ensuring every product has a longer useful life. Innovation here is practical: smarter processes, less waste. In our case, it also means experimenting with recycling solutions to extend the life of resources. If an aggregate can be recovered and repurposed decades from now, we've multiplied its value.

Can the industry keep pace with sustainability targets?

It won't be easy. Demand is rising, timelines are tightening. But the direction of travel is clear - less waste, more reuse, better design. Quarries that cling to the old ways will fall behind. Those that see themselves as part of a Circular Economy – data-driven, customer-responsive and willing to rethink specifications – will thrive. The pace is demanding, but then, so are the stakes.

Duqm is being positioned as a global hub. How does your quarry fit that narrative?

Our raw materials are literally shaping Duqm – its roads, ports, factories. But more than that, being part of SEZAD's industrial cluster means one company's by-product becomes another's raw material. That's industrial symbiosis in action. If Oman can scale that thinking – across quarries, factories and logistics – we can stretch resources further and extend the life of high-value assets not just here but internationally.

Building With Purpose

Duqm Quarries SAOC shows that even a quarry can have a circular mindset. By treating by-products as resources, adjusting to customer expectations and embedding itself within an industrial cluster, the company is shaping both Oman's infrastructure and its sustainability credentials.

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DUQM QUARRIES

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