

# Making Cities “Smart” by taking Carbon Circular

Managing  **Carbotopia**<sup>TM</sup> for a  
World in Carbon & Water Balance



# Turning Waste CO<sub>2</sub> Abatement Costs into Profits





# continuous catalytic Methane Pyrolysis

(by Chemical Vapor Deposition [CVD])



# Captured <sub>CVD</sub> Carbon $\mu$ Refining

mitigating rebound reactions by low reaction-temperature regimes

$\text{kJ / mol}$	$\text{kJ}$	$+ \text{kJ } \mu \sim E$	$^{\circ}\text{C gas}$
$\text{CH}_4 = \text{C} + 2\text{H}_2$	880	94.5	350
$\text{C} + \text{CO}_2 = 2\text{CO}$	384	38.5	280
$\text{C} + \text{H}_2\text{O} = \text{H}_2 + \text{CO}$	384	15.2	< 100
$\text{CO} + \text{H}_2\text{O} = \text{H}_2 + \text{CO}_2$	280	-11.4	< 100
$\text{CO} + 2\text{H}_2 = \text{CH}_3\text{OH}$	840	n.a.	250 $\equiv$ 90.8kJ







530Mt

non-combustion Oil applications

scope 1 & 2 -80Mt CO<sub>2</sub>



# Carbon Circular Economy supports 12/17 UN-SDGs

<p><b>1 NO POVERTY</b></p> 	<p>3 barrels crude oil equivalent value per Tonne MSW are squandered €250bln/yr that Carbon Circular Economy could save humanity.</p>	<p><b>3 GOOD HEALTH AND WELL-BEING</b></p> 	<p>Final destination of throwing AWAY is AIR today and when dumped, poisoned WATER burdens Hygiene &amp; Health on top.</p>	<p><b>6 CLEAN WATER AND SANITATION</b></p> 	<p>Value creation from waste can deter trash from flowing into the cheapest ditches where things leach into waters</p>
<p>Waste-CCU to Water-Gas-Shift Hydrogen Fuel Cells can cover 40% household peak-power on demand</p>	<p><b>7 AFFORDABLE AND CLEAN ENERGY</b></p> 	<p>Grave2Cradle Carbon Circularity competes from €30/bbl oil price w.o. waste dipping fees and can create new local employments</p>	<p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p> 	<p>CCU MSW reduction can kick off plant &amp; equipment industry in the order of today's civil airplane productions.</p>	<p><b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p> 
<p><b>10 REDUCED INEQUALITIES</b></p> 	<p>Recycled Carbon for plastics or hydrogen utility can re-finance itself saving people from PPP models by providing qualitative growth everywhere.</p>	<p><b>11 SUSTAINABLE CITIES AND COMMUNITIES</b></p> 	<p>Ubiquitous independence from crude oil with PV &amp; Wind plus Back-up utility from MSW reduction at no extra costs to citizens</p>	<p><b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b></p> 	<p>Carbon-Neutral incineration is a loss for 2°C Carbon Budget, GDP, Trade Balance, local jobs as well as purchasing power</p>
<p>Every CCU reduced Tonne of MSW mitigates 0.1.2t CO<sub>2</sub> equivalents and neutralizes 0.2t CO<sub>2</sub> in re-Use applications</p>	<p><b>13 CLIMATE ACTION</b></p> 	<p>~ €100.- treatment cost for 6-7 barrels crude oil equivalent Carbon value per Tonne Plastic waste will stop Maritime Plastics simply by greed!</p>	<p><b>14 LIFE BELOW WATER</b></p> 	<p>Closed loop Grave-to-Cradle Carbon value adding cycles build on regional partnership Eco- systems</p> 	<p><b>17 PARTNERSHIPS FOR THE GOALS</b></p> 



**managed by**  
guo-Business Development  
Schließmannngasse 17  
AT 1130, Vienna

**built on IP of**  
Bestrong International Ltd.  
11F/6 Tonnochy Road  
Hong Kong, Wan Chai



Carbotopia