Plastics and Chemicals Industry

- “The building blocks of a modern economy”
- “Critical Industry enabler”
A new toxic time bomb

- Global transport of PBTs
- Microplastics: Plastic pellets, ropes, Nets, Microbeads, Synthetic fabric
- Nanoparticles (engineered)
- Surface area to volume ratio
- PCB, DDT, Lindane, BPA, BFR
- Phthalates, EDC, PFC, PAH
Types of plastics and additives

Toxicity of plastics associated with:

- Residual monomers
- Intermediaries
- POPs

Additives

- Plasticizers
- Flame retardants
- Stabilisers
- Curing agents
- Colourants

Persistent Organic Pollutants

- PCB
- DDT
- HCH
- HCB
- PFC
- PBDE

When ingested by marine species, the contaminated plastics provide a clear route by which POPs can enter the marine food web.
## International Pellet Watch

Foul Bay Western Australia

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Foul Bay test</th>
<th>Range of levels recorded by International Pellet Watch</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCBs</td>
<td>20ng/g-pellet</td>
<td>7 to 486ng/g-pellet</td>
</tr>
<tr>
<td>DDT</td>
<td>9ng/g-pellet</td>
<td>3 to 323ng/g-pellet</td>
</tr>
<tr>
<td>PAHs</td>
<td>0.4ng/g-pellet</td>
<td>0.2 to 15ng/g-pellet</td>
</tr>
<tr>
<td>Hopanes</td>
<td>14ng/g-pellet</td>
<td>2 to 49 ng/g-pellet</td>
</tr>
<tr>
<td>HCH</td>
<td>&lt;0.2ng/g-pellet</td>
<td>0.1 to 37 ng/g-pellet</td>
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</tbody>
</table>
Levels of pollutants in other microplastics

- 2014 Norwegian Institute for Water Research
- Pesticides: DDT, HCH, Chlordanes, Cyclodienes, Mirex, HCB
- Industrial Chemicals and additives: PCBs, PBDE, BPA, PFCs, Phenols
- Byproducts: PAHs, Aliphatic hydrocarbons
Plastic Marine Pollution: a cross-sector issue
-needs a cross-sector response-

- Unity
- Collaboration
- Trust
- Support
- Respect
- Strength
- Determination
- Hope