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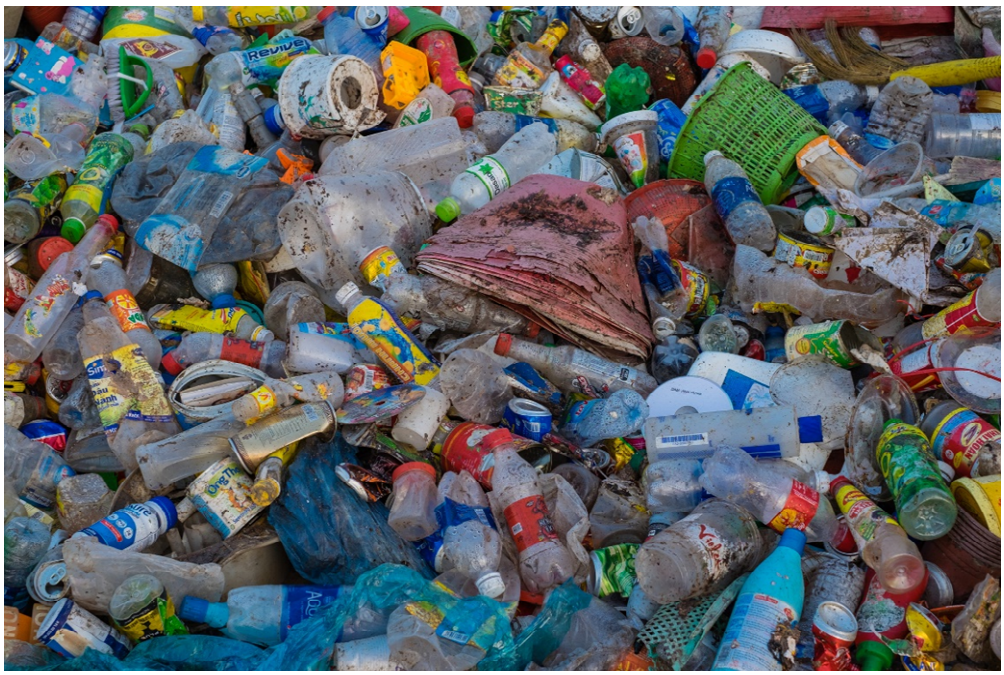
The Existential Crisis of the Petrochemical Industry and Discourses of Sustainability: Reflections from the 34th World Petrochemical Conference



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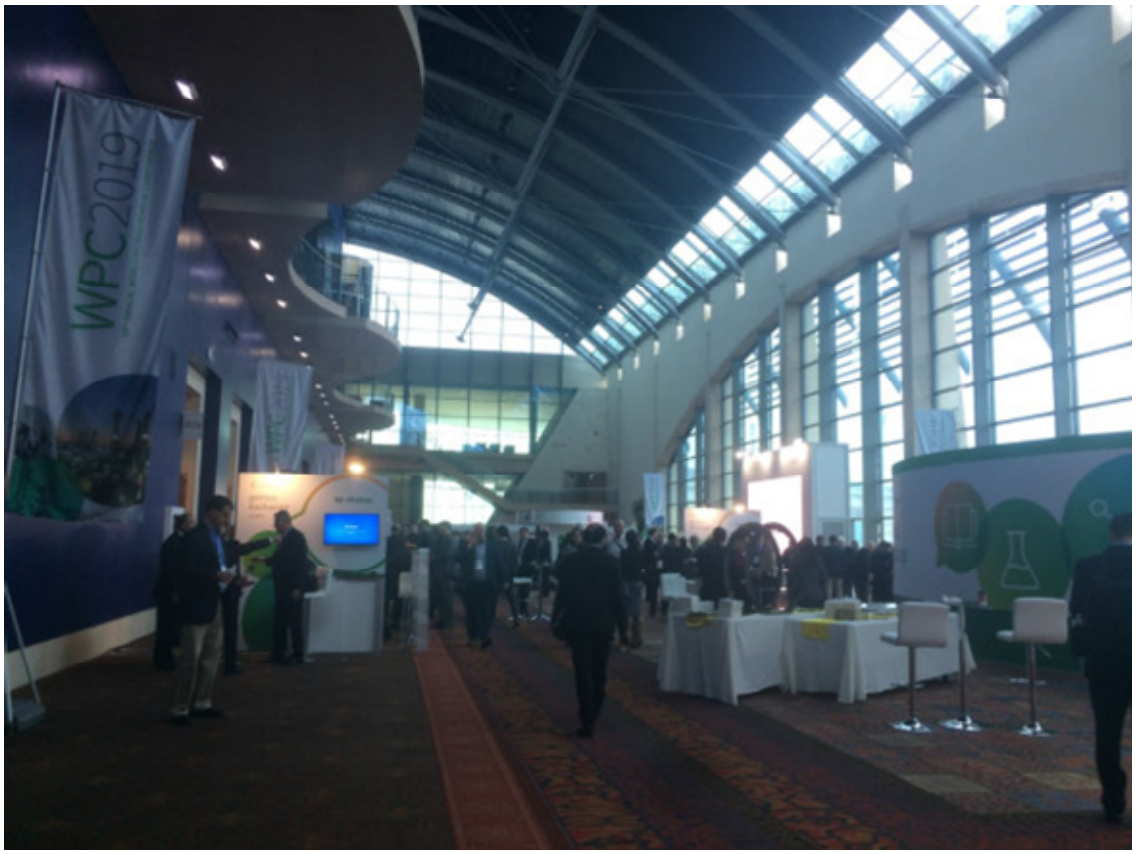
In recent years, a backlash against plastics has been observed in the public sphere, with plastics as a commodity seen to be losing its 'social licence'. Plastic waste has emerged as an environmental crisis in public discourse, considered to be pervasive and indomitable. According to the UN (2017), around 8 million tons of plastic waste are dumped every year into the seas, destroying marine wildlife and habitats. Plastic waste risks "near permanent pollution of the Earth", as scientists have recently suggested (The Guardian, 2017). The public is increasingly of the view that plastics production and consumption is unsustainable in its current state.

In response to this public backlash, governmental, non-governmental and corporate actors have made pledges to significantly reduce levels of plastic waste. A number of countries have committed to phasing out plastic packaging and single-use plastics. The EU has set a target of all plastic packaging in Europe being recyclable by 2030. In the corporate world, numerous initiatives and alliances have emerged to combat plastic waste. Notably, the Alliance to End Plastic Waste launched in early 2019, as a coalition of companies across the plastic waste chain, including 'chemical and plastic manufacturers, consumer goods companies, retailers, converters, and waste management companies'. Thus far, over 25 multi-national companies have participated in the Alliance, including Procter & Gamble, Shell, BASF and ExxonMobil. Together, the Alliance has committed $1 billion over the next 5 years to combat plastic waste (Alliance to End Plastic Waste, 2019).

Given its dependence upon plastics production and consumption, an existential crisis of sorts has emerged in the petrochemical industry. The industry has begun to shift towards a discourse of sustainability, increasingly talking about the circular economy and recycling initiatives. But, what is behind this discourse and what does this conversational shift really mean? I considered these questions, among others, at this year's 34th World Petrochemical Conference (WPC) in San Antonio, an annual petrochemical industry event organised by IHS Markit and aimed at providing critical insight and analysis into industry trends across the supply chain.

Sustainability was a key theme of this year's WPC event in San Antonio, Texas. For the first time in its history, there was a 'Sustainability Forum' at the conference on Day 1, devoting an entire afternoon session to questions of sustainability, recycling and the circular economy. Meanwhile, the 'Executive Panel' on Day 2 was strongly driven by discussions of the plastic waste crisis and how the industry can best respond to it, notably including chemical recycling, waste management infrastructure and clean-up operations.

Outside of the presentations, the conversations with delegates also reflected a shift in the conversation at the WPC, with many commenting on the stark change in this year's thematic agenda. While previously the WPC was almost purely an exercise in market forecasting, this year's focus had significantly shifted towards sustainability discussions. To varying extents, issues of sustainability were present in most discussions at the conference. As would be expected, the sustainability challenges were often couched in economic terms and considered in relation to future market trends and opportunities. However, during the 'Sustainability Forum' and the 'Executive Panel', plastic waste issues were discussed to some extent in their own right, as part of an open and 'bigger picture' discussion.



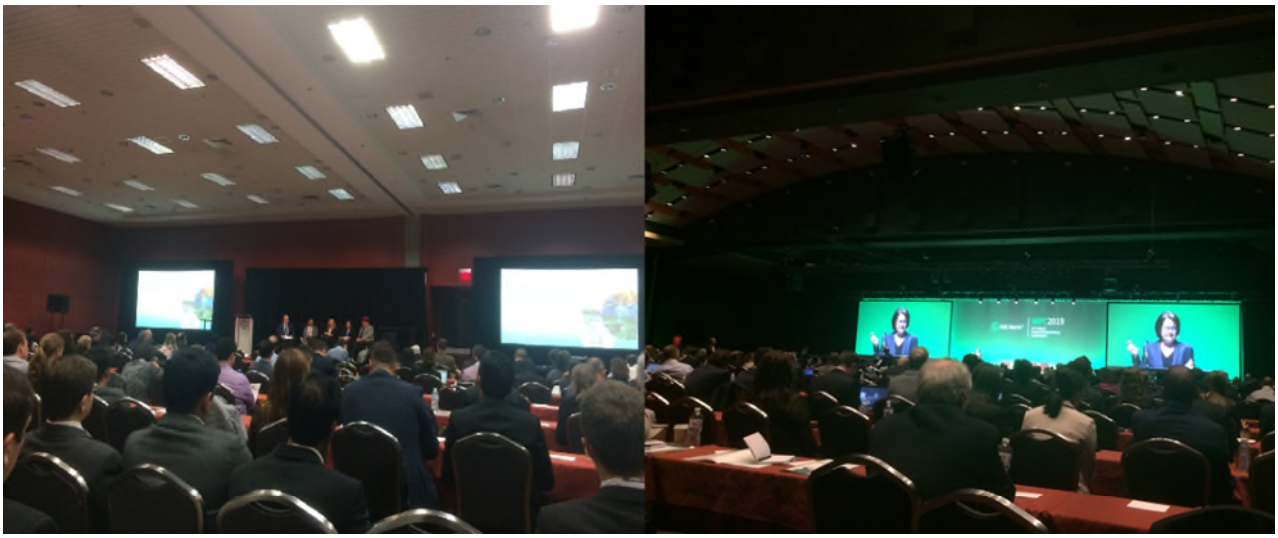
Networking break at the WPC, 2019 *Credit: David Brown, 2019*

One speaker at the WPC commented that this does not constitute a plastics 'crisis', but rather a 'moment of reflection' or 'turning point' for the petrochemical industry; however, the distinct and significant shift in discourse among industry actors at the conference suggests otherwise. Almost all industry speakers agreed on the urgent need to advance sustainable solutions to managing plastic waste. The Alliance to End Plastic Waste was presented as being key in responding to the crisis. Emphasis was placed on the Alliance's 'ambitious' targets and there was a general feeling among conference delegates that the movement and momentum surrounding the Alliance is unprecedented, after having formed and rapidly developed in a matter of months.

The largely uncritical praise generally heaped on the Alliance is evidently closely tied to the prominent position adopted by those who founded the Alliance at the WPC, with many of these presenting during the 'Sustainability Forum' and the 'Executive Panel'. However, the positivity surrounding the Alliance had also clearly percolated among delegates. I got the sense at the conference that delegates generally liked the idea of the industry, rather than regulators, leading the discussions on ending plastic waste. The Alliance presents an opportunity for the petrochemical industry to become perceived leaders in the conversation and action on plastic waste sustainability, rather than having regulations and legislation imposed on them.

Speakers and delegates at the WPC often brought up the argument that simply setting ambitious targets is insufficient if companies do not know how to achieve these and do not know the next steps in responding to these. There was a subtle critique of the EU's 2025 plastic waste targets in some of the sustainability conversations here (see here: http://ec.europa.eu/environment/circular-economy/pdf/plastics-strategy-brochure.pdf): that these are set too high, aren't realistic, and haven't sufficiently involved firms in setting these. Industry actors at the WPC tended to pitch themselves as more 'pragmatic' and 'reasonable' than regulators, suggesting that their enhanced involvement in regulatory conversations and establishment would engender further movement on tackling plastic waste. It was left implicit that if the petrochemical industry was involved in discussions around plastic waste regulation or the setting of associated targets, that these would be less strict or ambitious.

During the 'Sustainability Forum' and 'Executive Panel', conversations indicated forthright responses to the existential crisis faced by the industry. On numerous occasions, speakers and delegates attempted to aggressively justify the use and production of plastics. Emphasis was consistently placed upon the perceived comparative sustainability of plastics, notably their efficiency, light-weightedness and cost-effectiveness. Plastics were promoted as a 'sustainable solution' and as having a lower carbon footprint than other more intensive and heavier materials, related to transport fuels efficiency and reducing food waste.



Sustainability Forum and Executive Panel at the WPC, 2019 *credit: David Brown, 2019*

While accepting the need to effectively respond to the public backlash against public waste, some kind of advocation for plastics was brought up in almost every presentation and in many conversations. There was a sense that the industry feels it need to justify and rationalise its existence from a societal perspective, putting the growth of the industry in the broader context of the benefits that plastics has provided to society. Thus, the idea that this is an existential threat to the petrochemical/plastics industry holds some weight, considering that industry actors are making arguments for the existence of the industry that they have likely rarely made before, or at least for a long time.

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The positive narrative on plastics at the conference was closely tied to a framing of the public as unreliable, irrational or lacking in critical knowledge. In a number of the sustainability talks, the public was depicted as 'emotionally' responding to pictures of plastic waste, but not knowing the 'real story' about plastics. Notably, one speaker argued that the public does not understand the 'life cycle' of plastics, its sustainability benefits or the waste from other kinds of products, intimating that the public backlash against plastics is grounded in 'emotion', not 'data'. It was pointed out by another speaker that plastic waste has emerged as a key issue of sustainability in the public sphere because of its visibility (i.e. floating debris in the ocean), rather than it actually being the biggest issue.

Indications from the WPC were that the petrochemical industry's shift in conversation has been fundamentally driven by responding the public backlash against plastics, as a way of maintaining their 'social licence' in plastics production, and to emerging regulations around plastic waste management, rather than addressing the environmental challenges for their inherent worth. The narratives elsewhere at the WPC indicate that the industry would not be seeking to change practices otherwise.

Indeed, the industry's priorities were prominent in the other sessions at the WPC. A significant proportion of these were devoted to market forecasting and to assessing future opportunities for specific chemicals, e.g. styrene, benzene. This would have been an uninterrupted discussion at previous WPC events. Here, growth is king, with the conversation starkly shifting away from sustainability towards opportunities for expansion: increased integration, the expected development of 'mega refinery/petrochemicals' projects and the further growth of crude-to-chemicals technology in China.

As a Guardian (2019) report recently detailed, many of the same companies supporting an 'alliance to end plastic waste' are among those behind the largest investments in new plastic production plants (e.g. ExxonMobil, Shell) and depend on the continued growth of plastics production. The lack of fundamental change offered by the industry is reflected in the Alliance's primary proposed project areas (and focuses of discussion at the conference): new recycling technologies (including chemical recycling), recycling infrastructural developments and plastic waste clean-ups (Alliance to End Plastic Waste, 2019). All of these allow, and perhaps even facilitate, the continued growth of petrochemical and plastics production and do not address the fundamental issues of sustainability in the industry (e.g. short lifespan of products). I get the sense that the industry is having its cake and eating it: shifting the conversation towards recycling and sustainable waste management solutions, but fundamentally persisting with its growth-oriented market strategies.

The drive behind the discursive shift at the WPC was also reflected in the largely narrow definition of sustainability at the conference, with conversations almost entirely dominated by plastic waste management and recycling. There was little mention of other relevant topics of sustainability. Climate change was much less prominent at this year's WPC, but regulations surrounding it have evidently been a key driver of the industry's actions and strategies over the last few years. At this year's conference, the need for the industry to

keep in line with the GHG emissions targets set at the Paris COP was highlighted on occasions.

It is notable that other forms of environmental crises were not considered in the industry's analysis at the WPC, pertinently the significant levels of air and water pollution associated with petrochemical facilities. Indeed, during the conference itself, over 8 million toxic pollutants had been emitted from a large-scale fire at a Houston petrochemical facility (Grist, 2019). In fenceline communities over the world, the toxic pollution from petrochemical sites is closely linked to local environmental degradation and negative health outcomes on proximal residents, incorporating respiratory conditions (e.g. asthma), cardiovascular conditions, headaches and a raised risk of various forms of cancer. In 'sacrifice zones' (Lerner, 2010), such as Cancer Alley, an 85-mile stretch of land from New Orleans to Baton Rouge notable for its dense concentration of industry from the petrochemical sector, low-income, marginalised and minority communities have disproportionately borne the brunt of the everyday environmental and health impacts of living in close proximity to petrochemical sites, considered a form of 'slow violence' (Nixon, 2011).

Although we are dealing with different scales of concern, there is a notable disconnection between the localised health and environmental concerns of fenceline communities throughout the world, and the discourses of sustainability emanating from the petrochemical industry. The industry is concerned with responding to the existential crisis it faces around plastic waste and maintaining the social licence of plastic production, with other forms of environmental degradation and injustices effectively side-lined, removed as they are from public and media conversations. Equally, the unsustainable practices and strategies of the petrochemical sector can continue under the industry's narrow and bounded framing of sustainability.

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