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# **Chemical Billionaire's Bid for Fossil Fuel Empire:** Ineos Corporate Profile

## **Executive Summary**

For the past decade, the United States has pursued a failed experiment in natural gas extraction known as hydraulic fracturing, or fracking. Fracking injects large volumes of water, sand and chemicals deep underground, at extreme pressure, to create fractures in targeted rock formations to release the oil and gas. The fossil fuel industry touts fracking as a revolutionary technology that could deliver huge volumes of cheap, clean energy.

But the fracking boom has been an environmental catastrophe in the United States. The fracked gas and oil industry has polluted the water supplies of heavily drilled communities, produced massive volumes of toxic waste, caused earthquakes and imperiled vital aquifers from poorly constructed gas wells; meanwhile, oil and gas operations have become the second greatest global source of the potent greenhouse gas methane, threatening the climate and the planet.<sup>1</sup>

The private and secretive chemical company Ineos has been leading the charge to bring this environmentally destructive method to the United Kingdom (UK) and mainland Europe. The petrochemical conglomerate was rapidly assembled by its founder, James (Jim) Ratcliffe, who has amassed a fortune during Ineos' rise to become one of the world's largest petrochemical companies.

Now, Ratcliffe intends to use the same corporate strategy to push into oil and gas extraction. Already, Ineos has a foothold in the UK oil and gas sector. Ineos is keeping fossil fuels alive by doubling down on dirty manufacturing and fracking, and not the clean renewable energy future that the UK and the world needs.

Ineos kept a low profile during its rapid ascent, and it continued to do so even as the company became the biggest player in the UK fracking industry. Few people know about Ineos' corporate history, checkered environmental record<sup>2</sup> and relentless pursuit of profits. In 2010, the *Financial Times* reported that Ineos has been "a near-impenetrable business that, in spite of its size, divulged few details of its operations".<sup>3</sup>

The fracking "revolution" that Ineos promotes is a return to the past, where corporate executives profited off of environmentally destructive extraction and generation of dirty energy.



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## Introduction: The Ineos chemical empire

From its 1998 founding, Ineos has grown to be one of the top five global chemical companies — behind only industry titans like BASF and Dow Chemical.<sup>4</sup> In 2014, the *Financial Times* described Ineos as "an industrial force to be reckoned with".<sup>5</sup> The company grew from £121 million in sales in 1998 to £29.5 billion in sales with £3.5 billion in profits in 2016.<sup>6</sup>

By mid-2017, Ineos had over 70 manufacturing facilities and dozens of sales offices with over 17,000 workers in 18 countries across Europe, North America and Asia, with a substantial footprint in the UK.<sup>7</sup>

Ineos manufactures an array of chemicals and products, largely refined and processed from oil and natural gas.<sup>8</sup> The company's refineries, crackers, chemical plants and manufacturing operations produce plastics, coatings, lubricants, solvents, acids and more.<sup>9</sup> Ultimately, Ineos' chemicals and products are used in everyday goods including automobiles, bottle caps, computers, cosmetics, packaging, tyres, toothpaste, vaccines and wind turbines.<sup>10</sup>

The Ineos corporate family is a tangled maze of holding companies, subsidiaries and offshore branches. As of late 2016, Ineos was controlled by Ineos Limited — founder Ratcliffe held 61.8 percent, and two other executives, Andrew Currie and John Reece, held the remainder (19.2 percent and 19.0 percent, respectively).<sup>11</sup> These three executives own the Ineos Limited parent company, which in turn holds the entire sprawling corporate empire, and Ratcliffe has the power to elect all of the directors, change management and approve any acquisitions or divestitures for each of the scores of subsidiaries (see Figure 1 on page 3).<sup>12</sup>

Ineos recently began promoting itself as an "Anglo-Swiss" company.<sup>13</sup> In 2016, Ineos re-opened a new London headquarters with fanfare, and its executive owners became UK tax residents — but the company only promoted a "new base in London" and described it as a "twin head office".<sup>14</sup> Just six years earlier, in 2010, Ineos had fled from the UK to the corporate tax haven of Switzerland.<sup>15</sup>

But despite Ineos' substantial UK footprint, it is far from an English company. Ineos Limited, the ultimate parent company that controls everything, is incorporated in the Isle of Man, a low-tax offshore finance centre.<sup>16</sup> And many of Ineos' biggest holding companies remain based in Switzerland — such as Ineos AG, Ineos Holdings AG and Ineos Europe AG.<sup>17</sup>

Over the past dozen years, Ineos has transformed from a global chemical powerhouse into an oil, fossil fuel gas and petrochemical conglomerate. Ineos' expansion into oil, gas and pipelines now supplies its refineries, power production and petrochemical plants.<sup>18</sup>

Fossil fuel shale gas (or "natural" gas) is a key feedstock for its chemical plants. A significant portion of its business is manufacturing plastic pellets at its "cracking" plants for further manufacturing.<sup>19</sup> The key supply for these cracker plants is ethane, derived from natural gas liquids that are used to manufacture petrochemicals.<sup>20</sup> The US fracking boom has produced large volumes of ethane — especially from the shale plays in the northeastern United States that have become key sources of the ethane being shipped from the United States to Ineos' facilities in Norway and Scotland.<sup>21</sup>

## Jim Ratcliffe: Fossil Fuel Fat Cat

Ratcliffe is "Britain's most successful post-war industrialist", according to both the *Daily Mail* and the *Financial Times*.<sup>22</sup> But he also has been described as reclusive, secretive and little-known.<sup>23</sup>

By 2017, Ratcliffe's fortune was estimated at £5.75 billion — comparable to knights of the realm like Richard Branson — making him the 18<sup>th</sup> richest person in the UK and 140<sup>th</sup> globally.<sup>24</sup> In 2010, Ratcliffe decamped his fortune to low-tax Switzerland, before returning his personal tax residency to the UK in 2016.<sup>25</sup>

Ratcliffe has spent extravagantly, such as on his super yacht, *Hampshire II*, a 285-footer with a 23-person crew that cost an estimated £100 million.<sup>26</sup> He also recently bought a £2.7 million box at the Royal Albert Hall.<sup>27</sup> He has become one of the biggest landowners in Iceland after buying a 118-square-mile farm, investment stakes in salmon fishing rights and other farmland.<sup>28</sup> He also is the joint owner of a boutique hotel chain called Lime Wood Group, including Home Grown Hotels.<sup>29</sup>

Ratcliffe also has used his fortune to invest in a fossilfuelled future. Ineos is planning to revive the Land Rover Defender that was discontinued because it struggled to meet emissions standards, aiming to build as many as 25,000 of the petrol guzzlers annually.<sup>30</sup> He also is planning to build a £4 million home near the New Forest that can be seen only from boats on the Solent Strait separating the Isle of Wight from England.<sup>31</sup> He wanted his New Forest retreat to be equipped with jacks, which would have raised the mansion as sea levels rise.<sup>32</sup> But his plans to isolate himself from the effects of climate change that Ineos was contributing to was denied because of the excessive scale and environmental impact of the mansion.<sup>33</sup>



Over the past two decades, Ratcliffe built the Ineos chemical empire through a series of takeovers backed with high-risk loans, corporate bonds and private equity financing. Each acquisition brought new chemical plants that could collateralise more debt to finance the next takeover. Today, Ineos is replicating this strategy to pursue offshore drilling, fracking and more fossil-fuelled futility even as it has become abundantly clear that we need to shift rapidly to 100 percent renewable energy to prevent catastrophic climate chaos.

# The rise — and near fall — of Ineos

Despite its size today, 20 years ago Ineos did not even exist. Ratcliffe assembled the firm from cast-off bits of some of the chemical industry's storied corporations. Ratcliffe became what the *Daily Mail* called the "Tycoon you haven't heard of" from a modest, working-class Manchester background.<sup>34</sup>

After receiving a chemical engineering degree from Birmingham University in 1974, he worked for the Exxon Corporation affiliate Esso and for the textile and chemical firm Courtaulds.<sup>35</sup> His corporate experience fuelled a fascination with high finance; he studied management accounting and later got an MBA at the London Business School.<sup>36</sup> His business savvy landed him a spot at the American private equity firm Advent International in 1989, where he combined science with a newfound interest in buyouts and acquisitions.<sup>37</sup>

His boardroom connections and takeover talents led to a ground-floor business opportunity. In 1992, Ratcliffe and a former director of the British chemicals company Laporte drove a £40 million purchase of a single British Petroleum (BP) specialty chemicals plant in Kent, largely financed by Advent and his partner's fortune to create Inspec (International Specialty Chemicals).<sup>38</sup> Ratcliffe remortgaged his house for his Inspec stake.<sup>39</sup>

Under Ratcliffe's leadership as chief executive, Inspec went on a takeover tear, buying chemical firms and plants at a pace of nearly one deal per month — the firm was worth £136 million when it went public in 1994.<sup>40</sup> The original investment grew 15-fold by the time Inspec was sold to Laporte for £600 million in 1998.<sup>41</sup> Ratcliffe had left Inspec a year earlier, but he retained his shares and he pocketed £28 million when it was sold.<sup>42</sup>

## Ratcliffe launches Ineos empire

Ratcliffe's Inspec earnings formed the seed money to build his own chemical conglomerate. In 1998, he combined all his money with private equity and loans to buy a single chemical plant in Antwerp, Belgium from Inspec for £91 million.<sup>43</sup> This created Ineos, which was named for the prior business, INspec Ethylene Oxide and Specialties (INEOS), but the company also says its name comes from the Latin word for new beginning (*ineo*), the Greek word for new or novel (*neos*) and the Greek dawn goddess (*Eos*).<sup>44</sup>

Ratcliffe built Ineos into one of the biggest chemical companies by snapping up undervalued chemical operations using private equity and corporate debt. The chemical industry's economic condition rises and falls with the business cycle, which made it possible for Ineos to buy what one of its directors called "orphaned assets in blue chip majors" when the economy cooled.<sup>45</sup>



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Ineos made over 20 acquisitions during its first decade.<sup>46</sup> Starting from its single chemical plant, Ratcliffe bought a series of plants and businesses from established chemical giants like Amoco, BASF, Bayer, BP, Dow Chemical, Hoechst, Imperial Chemical Industries (ICI), Monsanto and Union Carbide (see Figure 2).<sup>47</sup>

Ratcliffe relied on high-yield corporate bonds and substantial loans to fuel his merger mania.<sup>48</sup> The 1999 £505 million purchase of ICI's acrylic business (which produced Perspex, or Lucite), for example, was financed with high-yield debt that gave Charterhouse Development Capital an 80 percent stake.<sup>49</sup> For its biggest sales pitch, Ineos brought hundreds of hedge fund managers to the Four Seasons' ballroom in London to offer what *The Economist* called a "fancy array of debt instruments that Ineos coaxed from creditors", including junk bonds and other high-risk finance offerings.<sup>50</sup>

The debt-financed mergers were followed by severe cost-cutting, which generated more revenues and profits to take on more debt to finance more take-overs.<sup>51</sup> Ineos' formula used a "short, sharp shock tactic", according to one director, and stopped

spending immediately after an acquisition.<sup>52</sup> The goal was to turn around poorly performing businesses to double their revenues within five years.<sup>53</sup>

#### **Debt nearly capsises Ineos during Great Recession**

The takeover-turnaround-takeover cycle culminated in the 2005 £5.1 billion purchase of BP's specialty petrochemical business, Innovene, which quadrupled Ineos' size and made it the fourth largest global petrochemical manufacturer.<sup>54</sup> It included Scotland's Grangemouth facility as well as refineries in Belgium, Canada, France, Germany and Italy.<sup>55</sup> This was Ineos' biggest takeover,<sup>56</sup> and it firmly re-oriented the company towards fossil fuels. The Grangemouth complex alone refined 210,000 barrels of crude oil daily and supplied 80 percent of Scotland's fuels.<sup>57</sup>

Innovene proved to be a nearly fatal takeover, as Ineos almost capsised under the debt load during the 2008 financial crisis.<sup>58</sup> The deal required £4.9 billion in bank loans, and by 2007 Ineos owed an estimated £5 billion to major financial players like Barclays Capital, Merrill Lynch and Morgan Stanley.<sup>59</sup> Global demand for chemicals evaporated during the recession.<sup>60</sup> The company's earnings fell by half, and it responded by severely cutting costs — including plant maintenance.<sup>61</sup>

Ineos struggled to survive. In late 2008, Ineos needed a six-month extension to avoid defaulting on £5.1 billion to more than 250 banks and investment funds; by mid-2009, Ineos' debt hovered at £6.7 billion.<sup>62</sup> Ineos paid £680 million in fees to its bankers.<sup>63</sup> By 2010, Ineos had renegotiated extensions for its loans but was still trying to right its corporate ship.<sup>64</sup>

The company curtailed its takeover spree, selling two companies in 2010 and a 49 percent stake in a refining business to PetroChina in 2011.<sup>65</sup> The meltdown also spurred Ineos to move its headquarters to the tax haven of Switzerland in 2010, after the UK refused to defer the company's value-added tax payments.<sup>66</sup> Ineos began to recover, but the slim operating margins of its refineries continued to drag on earnings.<sup>67</sup> The salvation came from cheap American fracked shale gas, setting the stage for Ineos' push to become Europe's biggest fracking company.<sup>68</sup>

## Ineos' new fossil fuel empire: repositioning the chemical colossus as a petro-powerhouse

Ineos' new petrochemical facilities and refineries needed abundant and affordable feedstocks from the oil and gas industry. The US fracking boom exploded just as Ineos' debt crisis came to a boil. From 2007 to 2016, US natural gas production grew by one-third and the industrial price for US gas fell by half.<sup>69</sup> Ineos' financial fortunes rebounded as prices for US fracked shale gas collapsed, making it cheaper for Ineos to import natural gas-based feedstocks to feed its petrochemical factories.<sup>70</sup>

According to industry analyst IHS Markit, Ineos is "poised to strengthen its position as a global chemical industry giant" by both importing US gas and developing UK shale gas.<sup>71</sup> Ineos' fortune has become entwined with its natural gas ambitions. In 2017, Ineos announced a £1.6 billion investment in its petrochemical plants — including upgrading ethylene crackers in Grangemouth, Scotland, and Rafnes, Norway, and building a propane plant in Antwerp, Belgium — that rely on importing "huge quantities" of gas from the United States.<sup>72</sup>

Ineos re-oriented itself as a petrochemical company that also reached upstream into oil and gas infrastructure, exploration and drilling. Ineos built its fossil fuel portfolio in much the same way it built its chemical empire. One Ineos director described it as an "opportunity to do in oil and gas what we did in chemicals 20 years ago, which is to buy assets from people who don't really want them anymore".<sup>73</sup>

Since the economic recovery, Ineos has doubled down on fossil fuels: it has invested heavily in importing shale gas from the United States; it is buying up fossil fuel assets such as pipelines and investing in fossil fuel infrastructure; and, it is aggressively pushing to frack in the UK.

#### The trans-Atlantic gas pipeline

In June 2010, Ineos launched its brainchild project: importing ethane from the United States to Norway and the UK (see Food & Water Europe's *The Trans-Atlantic Plastics Pipeline*).<sup>74</sup> The company struck 15-year deals to import US shale gas-based feedstocks for its chemical plants and transport the gas to both Rafnes and Grangemouth.<sup>75</sup>

By 2017, Ineos had eight "dragon ships" to create a virtual pipeline of ethane from US fracking facilities to Europe.<sup>76</sup> Each ship can transport liquefied natural gas, liquefied petroleum gas, liquefied ethylene gas and up to 800,000 tonnes of ethane annually.<sup>77</sup>

The first ethane shipment arrived at Rafnes in March 2016 and at Grangemouth in September 2016.<sup>78</sup> The ships supply Ineos' refineries but also allow the company to sell excess natural gas products to other chemical companies in Europe.<sup>79</sup> In 2017, Ineos invested £1.6 billion into its petrochemical and fossil fuel trading infrastructure, including the eight dragon ships.<sup>80</sup>



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The new supplies of imported gas products made Ineos' petrochemical plants more profitable, but they also made the company dependent on the imports. Without this imported gas, Ineos' plants would not run at full capacity, and sales and profits would lag — before the imports arrived, Grangemouth was operating at only 50 percent capacity.<sup>81</sup> Ratcliffe attributed Grangemouth's turnaround and survival entirely to the imports, stating that "without [imported] shale gas, it wouldn't be here today".<sup>82</sup>

That vulnerability to supply disruptions from the United States is not ephemeral. Growing grassroots opposition to ever-expanding US fossil fuel infrastructure could hamper Ineos' access to US gas supplies. In the summer of 2017, a judge temporarily halted construction on Sunoco's proposed Mariner East 2 pipeline in Pennsylvania— designed to supply the export terminal that delivers gas to Ineos — because of environmental concerns over some 90 construction slurry spills that polluted waterways and land along the route.<sup>83</sup> Sunoco subsequently agreed to implement procedures to prevent future spills in order to resume drilling.<sup>84</sup>

But the public opposition to the Mariner East 2 pipeline, which leads to the Marcus Hook export facility, remains high.<sup>85</sup> The growing public resistance to pipelines and gas infrastructure could make it harder for Ineos to secure steady supplies of imported gas. To hedge against any potential supply disruption, Ineos has supplemented its import strategy by buying its own gas infrastructure and production assets including promoting fracking in the UK.

#### Investing in fossil fuel infrastructure

Ineos has begun purchasing oil and gas infrastructure to supply its factories and to enter into the energy sector, often supplementing its shale gas import plans. In 2016, Ineos completed a £200 million shale gas tank at Grangemouth to store imported gas.<sup>86</sup> In 2017, Ineos planned to build the largest butane storage tank in European history.<sup>87</sup>

But other moves took Ineos into oil and gas production and distribution. In 2015, Ineos bought 12 North Sea gas fields for £490 million that supplied the gas that could heat one-tenth of homes in the UK.<sup>88</sup> This was the company's first attempt to apply its chemical takeover-turnaround strategy to target fossil fuel companies.<sup>89</sup>

In 2017, Ineos bought the Forties Pipeline System from BP for £198 million.<sup>90</sup> The Forties supplies almost 40 percent of the UK's North Sea gas and oil as well as

the hub that sets a key global price index, the Brent crude oil benchmark.<sup>91</sup> The pipeline also supplies Grangemouth, which refines the bulk of fuel used in Scotland.<sup>92</sup> Observers were concerned about giving Ineos so much power over the UK's energy, with one oil industry source worrying that the deal "would be like giving a monkey a machete".<sup>93</sup>

Ineos then bought Dong Energy's entire oil and gas business for £1 billion (Dong, a Danish company, is switching entirely to wind and renewable energy).<sup>94</sup> The deal covered oil and gas fields that produced 100,000 barrels of oil equivalent per day with estimated reserves of 570 million barrels of oil equivalent in 2016.<sup>95</sup> The purchase made Ineos one of the top 10 oil and gas producers in the North Sea region.<sup>96</sup>

These fossil fuel assets created a staging platform for Ineos' push into fracking for shale gas in the UK. The pipelines and storage investments on top of the company's petrochemical plants were ideally placed to serve Ineos' fracking leases — and ambitions.<sup>97</sup>

#### Ineos becomes biggest shale gas player in the UK

Ineos promotes fracking shale gas in the UK — and possibly elsewhere — as "transformational" in delivering power and petrochemical feedstocks that could "revolutionise UK manufacturing".<sup>98</sup> In 2014, Ineos announced a planned £640 million investment to "kick-start a shale gas revolution," according to *The Guardian*.<sup>99</sup> Ratcliffe claimed he wanted Ineos "to become the biggest player in the UK shale gas industry".<sup>100</sup>

Despite Ineos' relentless cheerleading, the company seems to be massively overselling the likely UK shale reserves — meaning that it is promoting environmentally risky drilling for an unlikely payoff. The research director of the UK Energy Research Centre dismissed "the idea that shale gas is going to solve our energy problems — there's no evidence for that whatsoever, it's hype".<sup>101</sup> A University of Edinburgh professor believes that Scotland's geology will not allow for economically viable fracking.<sup>102</sup> Many of Ineos' licences in Scotland are expected to have modest shale gas reserves, according to the British Geological Survey.<sup>103</sup> But Ineos has stated that the "once-in-a-generation" shale gas opportunity "must not be rejected".<sup>104</sup>

Fracking has not taken off in the UK, but it is not for a lack of trying by the fossil fuel industry. In 2008, the energy firm Cuadrilla acquired licences to explore shale in England and drilled its first test well in Lancashire in 2010.<sup>105</sup> This first well re-activated nearby seismic faults and caused tremors that exceeded expectations.<sup>106</sup>

Following the earthquakes, the UK imposed a temporary ban on fracking in May 2011 that lasted through December 2012, when fracking was reauthorised.<sup>107</sup>

Despite this reauthorisation, there is widespread and growing opposition to fracking throughout the UK, and local governments have spurned overtures by companies to commence drilling.<sup>108</sup> By 2017, only Cuadrilla's single well had been drilled to frack for shale gas in the UK.<sup>109</sup> But a January 2017 briefing paper by the UK House of Commons found that two drilling approvals in late 2016 "suggest[ed] that the UK is getting closer to commercial shale gas exploitation".<sup>110</sup>

While the public and local governments have stalled the full-tilt that fracking companies like Ineos are demanding, the UK national government is paving the way for fracking companies. In 2015, the UK allowed the national government to expedite drilling applications and even to override local governments' efforts to prevent drilling.<sup>111</sup> In a 2017 *Derbyshire Times* advertising supplement, Ineos supported the move to overrule local opposition to shale gas drilling.<sup>112</sup>

And the UK changed its law to allow fracking companies to horizontally drill for gas under a landowner's property without their consent in 2015.<sup>113</sup> This allows companies like Ineos to drill from nearby platforms beneath land without owners' consent and to drill under natural parks or environmentally sensitive areas. Ineos promises not to drill in densely populated or environmentally designated areas, but it would consider accessing gas under these areas through horizontal drilling.<sup>114</sup>

Ineos has pressed the Scottish government to lift its moratorium on fracking — even as the government was seemingly moving towards a permanent ban.<sup>115</sup> In 2017, the Scottish government announced that the moratorium will remain in place indefinitely after receiving more than 60,000 comments on its consideration of the fracking moratorium — over twice the number it received for the 2012 independence referendum.<sup>116</sup> Ineos is expected to sue to block any ban from going into effect.<sup>117</sup>

## Ineos' expanding fracking footprint

Initially, Ineos sat on the sidelines during the early fracking push, eager for cheaper fuel but un-involved with the actual extraction process.<sup>118</sup> Its 2014 kickoff investment included two exploration licences in Scotland around Grangemouth.<sup>119</sup> By 2015, the company held licences covering 700 square miles in Scotland.<sup>120</sup>

By 2016, Ineos had 23 licences to explore for oil and gas and launched a major seismic survey to identify



**MAP 1:** INEOS' SHALE GAS LICENCE

**SOURCE**: Food & Water Europe map based on UK Oil & Gas Licence Authority data.

potential fracking locations and to perform exploratory core drilling, aiming to begin the test fracking of 30 wells after receiving planning permission.<sup>121</sup> The executive director of Ineos Shale said it was "firing the starting gun" to begin fracking in the UK.<sup>122</sup> Ineos promised even more investment if and when the company moved from exploration into shale gas production.<sup>123</sup>

Ineos bought the UK shale licences of Engie Group (former Gaz de France) in early 2017, adding eight new licences and increasing its ownership of seven more in which it already had invested.<sup>124</sup> By 2017, Ineos was by far the biggest holder of UK shale licences.<sup>125</sup> It held exploration licences covering over 1.2 million acres in Cheshire, East Midlands, South and North Yorkshire and Scotland and hoped to submit 11 planning applications to begin drilling on all of its English licences (see Map 1).<sup>126</sup>

Ineos plans to expand its fracking ambitions. An Ineos Shale executive stated that the company was "always going to be interested in acquiring additional acreage".<sup>127</sup> Ineos has even suggested expanding its fracking ambitions to Germany and the United States.<sup>128</sup>

#### Ineos fracking risks historic and natural treasures

Ineos' fracking push could imperil UK national treasures. Ineos holds shale gas licences covering portions of Sherwood Forest, of Robin Hood legend.<sup>129</sup> While Ineos has promised not to frack *in* the forest, it is doing seismic surveys in portions of Sherwood Forest and submitted an application to drill a vertical well about 15 kilometres from the forest border — but it has stated that it could remotely access gas *under* environmentally or historically designated areas through horizontal drilling.<sup>130</sup>

Beyond Sherwood Forest, Ineos still holds licences and aims to frack a number of notable sites.<sup>131</sup> Ineos' licences near Liverpool could mean drilling near Roman ruins.<sup>132</sup> Ineos has a stake in a licence in Lincoln that covers an 11<sup>th</sup>-century cathedral.<sup>133</sup> Ineos holds exploratory licences near North York Moors National Park, which attracts nearly 8 million visitors annually, but Parliament blocked drilling inside the park itself.<sup>134</sup> Two of Ineos' licences would potentially allow Ineos to frack under and around the River Forth, activity that could adversely affect the river's salmon runs.<sup>135</sup>

#### Ineos' fracking charm offensive

Ineos' fracking public relations campaign courts local government officials and assuages environmental concerns. Ratcliffe himself has lobbied parliamentary leaders, and a company official's letter to the UK Department of Energy & Climate Change claimed that Ratcliffe "is very well connected and has had a number of meetings with Ministers in various Departments".<sup>136</sup> On top of lobbying to expedite the approval of fracking, Ineos led the lobbying effort that exempted manufacturers from £350 million in green taxes.<sup>137</sup> In Scotland, the company's officials held a secret meeting with leaders of the Scottish National Party (SNP) as they considered imposing the fracking moratorium.<sup>138</sup> Ineos also lobbied SNP members to try and lift the fracking moratorium.<sup>139</sup>

The company also has been pressing local governments to approve fracking. The operational director of Ineos' UK shale business has been "explaining the science" and "engag[ing] the community" and promising to "listen to the concerns that people have locally".<sup>140</sup> Ineos Shale planned to meet with local councils across northern England, including in Cheshire, Yorkshire and East Midlands.<sup>141</sup> Despite its supposed local engagement, in March 2017 one local village only learned the details of Ineos' exploratory drilling plans more than a year after Ineos was awarded licences.<sup>142</sup>

Ineos attacks fracking critics and mollifies local communities with promised rewards or implied threats. Ratcliffe has said that fracking's "so-called problems are all myths".<sup>143</sup> The chief executive of Ineos Shale said that the public was being misled by "scare stories", and an Ineos advertising supplement emphasised "a huge amount of misinformation" about the dangers of fracking.<sup>144</sup>

**Dismissing the risks of fracking:** Ineos downplays the environmental risks of fracking, despite the fact that the company has never drilled a producing oil or gas well in the UK.<sup>145</sup> It contends that none of the fracking-



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related water pollution problems in the United States will happen in the UK.<sup>146</sup> Ineos has even proposed dumping treated fracking wastewater into the ocean, telling a local community that it would take recovered wastewater, "contain it, treat it back to the standards agreed ... and discharge where allowed under permit, most likely the sea", but some expert water managers doubted that the water plants could treat fracking wastewater.<sup>147</sup>

Fracking contributes substantially to climate change. Methane leaks from gas and oil infrastructure alone are the second leading human-caused greenhouse gas emissions worldwide, and methane is at least 86 times more potent than carbon dioxide at trapping heat over the next 20 years.<sup>148</sup> Ineos has downplayed the climate impacts of fracking and claimed that methane leaks can be "safely manage[d]".<sup>149</sup>

Ineos admits that "shale gas is not carbon free" but promises that carbon capture and sequestration which it concedes is commercially unproven — would make shale gas a zero-carbon energy source.<sup>150</sup> The company also has dismissed renewable energy as "decades" away and contends that relying on wind and solar power would lead to "power cuts, blackouts and shortages".<sup>151</sup>

#### Ineos' carrots (royalties) and sticks (threats):

Ineos has promised locals 6 percent royalties on the extracted fracked gas — 4 percent to landowners and 2 percent to surrounding communities — to reduce opposition to fracking.<sup>152</sup> But it also has implied that if it cannot frack in the UK, it will shutter its factories. Ineos has suggested that unless domestic fracked gas lowers UK energy prices, the company might close its petrochemical plants such as Grangemouth and the Runcorn plant in Cheshire.<sup>153</sup>

Ineos also has pushed back against fracking opponents. During the summer of 2017, the company threatened the National Trust with legal action for refusing to allow seismic surveying to prepare for exploratory drilling near Clumber Park in Nottinghamshire near Sherwood Forest.<sup>154</sup> Several of Ineos' divisions also recently sought a court injunction against peaceful anti-fracking protest activities, including conduct "such as amounts to intimidation or annoyance" or obstructing traffic, "including but not limited to slow walking" with the intent to "obstruct, impede or interfere" with efforts to search for gas or oil.<sup>155</sup> In September 2017, the court issued an order largely granting the Ineos plaintiffs' requests to subject anti-fracking protestors to contempt charges but subject to another hearing.<sup>156</sup>

## **Conclusion and Recommendations**

Although Ineos is a new company, it has a decidedly retrograde dirty energy vision for the UK. In two decades, it ballooned from a chemical conglomerate to an energy empire based on oil, gas and fracking, making its founder Jim Racliffe astoundingly rich in the process.

Fracked gas is incompatible with European Union (EU) and United Kingdom (UK) climate objectives, the Paris Agreement obligations and the need to act quickly to tackle climate change. Instead, Ineos is plowing billions into fossil fuels and petrochemical plants when we must act decisively to invest in clean, renewable energy. Climate change demands action, and here are our recommendations:

- Fracking should be banned everywhere: in the United States and across Europe. The United Kingdom should follow Scotland's lead and ban fracking in England, Wales and Northern Ireland.
- The United States must stop fossil fuel exports, the UK and the EU should not accept fossil fuel imports, and the construction of infrastructure to support this global gas and oil trade must be halted.
- People should limit their purchases of non-biodegradable plastic products that effectively support and finance the oil and gas industry, and also should work for public policies that discourage the use of these plastics.
- The United States, the UK and the EU should enact aggressive energy conservation policies, including large public transport investments and widespread deployment of other energy-saving solutions.
- The United States, the UK and the EU should establish ambitious programmes for deploying and incentivising existing renewable energy and energy efficiency technologies in order to slash fossil fuel demand to reach 100 percent clean renewable energy by 2035, while modernising electrical grids to cater to distributed renewable power generation.
- The United States, the UK and the EU should invest in research and development to overcome technological barriers to the next generation of clean energy and energy efficiency solutions.
- The United States, the UK and the EU should oppose provisions in international trade agreements that promote the global trade in fossil fuels.
- The United States, the UK and the EU should enact and implement rules to penalise companies that reside in offshore tax havens and push for full corporate financial transparency.

## **Endnotes**

- Gottlieb, Barbara. "From Flint to fracking, EPA can learn from its mistakes". The Hill (US). 23 March 2016; Frazier, Reid. "Pennsylvania confirms first fracking-related earthquakes". The Allegheny Front. 18 February 2017; Jackson, Robert B. et al. "Natural gas pipeline leaks across Washington, DC". Environmental Science & Technology. Vol. 48, Iss. 3. January 2014 at 2051; Troutman, Melissa A. et al. "Hidden data suggests fracking created widespread, systemic impact in Pennsylvania". Public Herald. 23 January 2017; Ingraffea, Anthony R. et al. "Assessment and risk analysis of casing and cement impairment in oil and gas wells in Pennsylvania, 2000-2012". Proceedings of the National Academy of Sciences. May 2014 at 2; See Keranen, K.M. et al. "Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection". Science. 3 July 2014; McDermott-Levy, Ruth et al. "Fracking, the environment, and health. New energy practices may threaten public health". American Journal of Nursing. Vol. 113, No. 6. June 2013 at 48; Mall, Amy and Dianne Donnelly. Natural Resources Defense Council. "Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy". September 2010 at 8 and 9; Urbina, Ian. "Regulation lax as gas wells' tainted water hits rivers". New York Times. 26 February 2011; US Environmental Protection Agency (US EPA). [External Review Draft]. "Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources". (EPA/600/R-15/047a.) June 2015 at ES-14 and ES-15.
- 2 Edwards, Rob. "Ineos Grangemouth plant rated poor again over pollution". *Scotland Herald*. 6 May 2017; Watson, Jeremy. "Fracking firm warned over Grangemouth safety". *The Times*. 9 December 2015; European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL). "Lessons Learnt From Industrial Accidents: Final Project Report". 2009-01. Seminar. Paris, France. 3-4 June 2009 at 15 to 22; Clay, Oliver. "Chemical firm fined £166,650 over toxic spill in Runcorn canal". *Liverpool Echo*. 15 June 2015; Sneath, Sara. "Ineos Nitriles worker dies from cyanide exposure". *Victoria (Texas) Advocate*. 10 June 2015.
- 3 Marsh, Peter. "Ineos ready to roll back the veil of secrecy". *Financial Times*. 28 December 2010.
- 4 ICIS Chemical Business. [Press release]. "The ICIS top 100 chemical companies ranking unveiled". 5 September 2017; Katakey, Rakteem and Andrew Marc Noel. "Billionaire Ratcliffe hunts oil to repeat chemicals empire." *Bloomberg.* 24 May 2017; Wachman, Richard. "Industry's biggest secret." *The Guardian.* 31 January 2009.
- 5 Pfeifer, Sylvia. "Jim Ratcliffe: Ineos Group Ltd.". *Financial Times*. 20 November 2014.
- 6 Ineos. [Press release]. "INEOS to buy the entire oil & gas business from DONG Energy A/S for a headline price of \$1.05 billion plus \$250 million contingent". 24 May 2017; Ineos. [Press release]. "INEOS achieves record profitability with 4.3 billion Euros of EBITDA". 19 February 2017; US Federal Reserve Board. Foreign Exchange Rates G.5.A Annual. All currency conversions made with US Federal Reserve Board annual reports. Ineos' \$200 million in 1998 sales amounted to £121 million; its \$40 billion in 2016 sales amounted to £29.5 billion, and 2016 profits of €4.3 billion amounted to £3.5 billion.
- 7 Ineos. [Press release]. "Chemical giant INEOS officially opens its new UK headquarters". 6 December 2016; Ineos. "Office, Manufacturing & Energy Resource Locations". Available at www.ineos.com/locations/. Accessed September 2017.
- 8 Ineos Group Holdings S.A. 2016 Annual Report and Financial Statements. 2017 at 46.
- 9 *Ibid*. at 83, 84, 85, 87 and 91.
- 10 Katakey and Noel (2017); Pfeifer (2014); Ineos Group Holdings S.A. (2017) at 74, 83 and 98.
- 11 Ineos Group Holdings S.A. (2017) at 103; Watts, Robert. "The Sunday Times Rich List 2017: UK's Richest 1,000". *Sunday Times*. 13 August 2017.
- 12 Ineos Group Holdings S.A. (2017) at 35; *see, for example*, Keuper Gas Storage Limited. 2016 Annual Report and Financial Statement. 31 December 2016 at 14 *and* Grangemouth CHP Limited. 2016 Annual Report. 31 December 2016 at 24. Ineos corporate structure based on

Food & Water Europe analysis of 2016 Ineos annual reports, financial statements and corporate filings from UK's Corporate House and the Swiss Confederation's Federal Statistical Office, including Ineos ABS, Ineos Chemicals Grangemouth Limited, Ineos Chlorotolenes Limited, Ineos Compounds Aycliffe Limited, Ineos Compounds Holdings Limited, Ineos Compounds UK Limited, Ineos Enterprises Group Limited, Ineos Enterprises Holdings Limited, Ineos European Holdings Limited, Ineos Finance Company, Ineos Grangemouth PLC, Ineos Group Holdings S.A., Ineos Group Investments Limited, Ineos Holdings AG, Ineos Holdings International Limited, Ineos Holdings Limited, Ineos Holdings Luxembourg S.A., Ineos Industries Holdings Limited, Ineos Industries Limited, Ineos Industries Limited, Ineos Industries Property Limited, Ineos Infrastructure (Grangemouth) Limited, Ineos Investment Holdings (Germany) Limited, Ineos Offshore BCS Limited, Ineos Paraform Holdings Limited, Ineos Phenol China, Ineos Solvents UK Limited, Ineos Styrolution Holding Limited, Ineos Upstream Limited, Ineos Vinyls UK Limited, Inovyn ChlorVinyls Holdings Limited, Inovyn ChlorVinyls Limited, Inovyn Finance Plc, Inovyn Holdings Limited and Inovyn Limited.

- 13 Ineos (6 December 2016); Vaughan, Adam. "Ineos buys Dong Energy's oil and gas business in £1bn deal". *The Guardian*. 24 May 2017; "EU mergers and takeovers (July 17)". *Reuters*. 17 July 2017.
- 14 Ineos has been vague about whether it is now incorporated in the UK; the company press release does not proclaim that the company had become incorporated in the UK for tax purposes; both the Ineos press release and the *Sunday Times* highlight the return of the Ineos executives but not the company itself. Ineos (6 December 2016); Rose, Gareth. "Sturgeon 'must come clean on fracking talks'". *Scottish Daily Mail.* 16 July 2015; Watts (2017).
- 15 Pfeifer (2014).
- 16 Ineos Group Investments Limited. 2016 Annual Report and Financial Statement. 31 December 2016 at 20; European Union. Director General Taxation and Customs Union. "First step towards a new EU list of third country jurisdictions: Scoreboard". 13 September 2016 at Table I; Kirwin, Joe. "EU mulls tax sanctions for countries branded tax havens". *Bloomberg.* 2 March 2017.
- 17 Ineos Group Investments Limited (2016) at 20; Ineos Enterprises Holdings Limited. 2016 Annual Report and Financial Statement. 31 December 2016 at 75; Ineos 2010 Limited. 2016 Annual Report and Financial Statement. 31 December 2016 at 15; Swiss Confederation Federal Statistical Office. UID-Register. Ineos Holdings AG. Swiss Confederation Federal Statistical Office. UID-Register. CHE-115.604.963. 3 March 2017.
- 18 Ineos. [Press release]. "Ineos acquires Grangemouth power plant from Fortum for £54 million." 2 October 2014.
- 19 Ineos Group Holdings S.A. (2017) at 46; Pennsylvania State University Extension. "Fractionator? Cracker? What Are They?" 15 April 2012; Emerson Process Management. "Chapter 1. Ethylene Production". 2010 at 1 to 2; Ghanta, Madhav et al. "Environmental impacts of ethylene production from diverse feedstocks and energy sources." *Applied Petrochemical Research*. Vol. 4, Iss. 2. 2014 at 167 and 169; PricewaterhouseCoopers. "Shale gas. Reshaping the U.S. chemicals industry". October 2012 at 6; Lyle, Sarah K. Magruder. American Fuel & Petrochemical Manufacturers. National Conference of State Legislatures, Capitol Forum, Energy Supply Task Force. [PowerPoint]. "The Shale Revolution: Realizing America's Manufacturing Renaissance". 8 December 2015 at slide 7.
- 20 US Department of Energy (DOE). Energy Information Administration (EIA). "What are natural gas liquids and how are they used?" 20 April 2012.
- 21 EIA. "Ethane production expected to increase as petrochemical consumption and exports expand". 1 April 2016; Pickett, Al. "Marcellus, Utica Shales make Northeast focal point of growing U.S. production". *American Oil & Gas Reporter*. November 2013 at 3 and 5; Energy Ventures Analysis, Inc. "Outlook for Natural Gas Supply and Demand for 2015-2016 Winter". 2015 at 23 to 25; Macalister, Terry. "First US shale gas sails into Europe as Ineos carrier arrives in Norway". *The Guardian*. 23 March 2016; Brockett, Dan. Pennsylvania State University Extension. [PowerPoint]. "Natural Gas Liquids". At slides 2, 14 and 21.
- 22 "The dastardly Mr. Deedes's Big Shot of the Week: Jim Ratcliffe, 64, Chairman and Chief Executive, Ineos". *Daily Mail*. 18 February 2017; Pfeifer (2014).
- 23 Pfeifer (2014).

- 24 Daily Mail (2017); Watts (2017); "The world's billionaires: 2017 ranking." Forbes. Available at https://www.forbes.com/billionaires/ list/#version:static. Accessed September 2017.
- 25 Fortson, Danny. "Chemicals tycoon Ratcliffe heads home from Swiss tax exile". *Sunday Times*. 17 July 2016.
- 26 Pfeifer (2014); Rose (2015).
- 27 Hellen, Nicholas. "Billionaire Jim Ratcliffe buys box at Royal Albert Hall for £2.7m". *Sunday Times*. 28 May 2017; Pfeifer (2014).
- 28 "Biggest landowner in Iceland a British billionaire". *Iceland Monitor*. 26 April 2017; "British billionaire buys vast farm in the highlands. Intends to do 'absolutely nothing' with it". *Iceland Mag*. 20 December 2016; "British billionaire attempts to buy farms in a E. Iceland fjord, causing family feuds". *Iceland Mag*. 12 January 2017.
- 29 Burn-Callander, Rebecca. "Robin Hutson, founder of Pig-Hotel chain: 'I have a love-hate relationship with hotels". *The Telegraph*. 29 October 2016.
- 30 Fortson (2016); Ineos. [Press release]. "Ineos launches search for a site to build it new uncompromising 4x4 off-roader." 6 June 2017.
- 31 Daily Mail (2017).
- 32 Turley Associates. Thorns Beach House Planning, Design and Access Statement. Planning Application Submission to New Forest National Park Authority. December 2010 at ii, 27 and 33.
- 33 New Forest National Park Authority. "Planning Development Control Committee — Application No: 14/00520/FULL Full Application". 21 October 2014 at 9 and 10; New Forest Park Authority. Appeal Decision Ref. APP/B9506/W/15/3019437. 2 March 2016 at 1 and 10.
- 34 Daily Mail (2017); Pfeifer (2014).
- 35 Finch, Julia. "Jim Ratcliffe: multibillionaire behind Ineos". *The Guardian*. 25 April 2008; Johnson, Luke. *The Maverick*. Hampshire, UK: Harriman House. 2007 at 79; Henry, Kristine. "Evil Empire' members to share history again Exxon's, Mobil's origins precede breakup of Standard Oil Trust". *Baltimore Sun*. 2 December 1998; Cowe, Roger. "Financial outlook: Courtaulds goes its different ways". *The Guardian*. 31 October 1989.
- 36 Finch (2008); "Ratcliffe, the alchemist". *The Telegraph*. 12 August 2007.
- 37 Finch (2008); *The Telegraph* (2007); Perry, Jo. "The tycoon behind oil plant Ineos". *BBC News*. 28 April 2008.
- 38 The Telegraph (2007); Finch (2008); "Inspec to raise pounds 50m through float: Specialty chemicals business goes to market with pounds 100m price on its head". The Independent. 7 February 1994.
- 39 Pfeifer (2014).
- 40 *The Telegraph* (2007).
- 41 Guerrera, Francesco. "Laporte in takeover talks with Swiss giant". *The Independent*. 12 April 1999.
- 42 Perry (2008); The Telegraph (2007).
- 43 "Ineos fights on through the downturn". *Sunday Times*. 28 June 2009; Pfeifer (2014).
- 44 Ineos. "Jim's a leader in his field: Ineos chairman joins the elite." *Inch Magazine*. Iss. 4. 2013.
- 45 Pfeifer (2014).
- 46 Daily Mail (2017).
- Johnson (2007) at 79; The Telegraph (2007); Finch (2008); Pfeifer (2014). 47 Food & Water Europe assembled the merger tree from corporate documents and media reports, including: Ineos. "FactFile 2010". 2010 at 6 and 7; "ICI agrees to sell acrylic business to Ineos Acrylics for \$835 million". Dow Jones. 4 October 1999; Murray-West, Rosie. "Chlorine plant closure row rumbles on for ICI". The Telegraph. 10 April 2002; Gilmore, Graine. "Business big shot". The Times. 21 April 2008; Compass Minerals International. [Press release]. "Compass Minerals International announces sale of UK Evaporated Salt plant to Ineos Enterprises". 3 January 2006; Short, Patricia L. "Global Top 50". Chemical & Engineering News. Vol. 86, Iss. 30. 28 July 2008; Ineos. [Press release]. "Ineos and BASF to establish a new leading global styrenics company called styrolution". 30 November 2010; Ineos. [Press release]. "Ineos Enterprises today completes the acquisition of Sasol Solvents Germany GmbH assets and the associated business at Sasol sites in Moers, Herne". 3 June 2014; Ineos. [Press release]. "Ineos acquires Grangemouth power plant from Fortum for £54 million". 2 October 2014; Washington, Thomas and

Amar Carmody. "Special Report Petrochemicals: Contraction of Europe's PVC Market". *Platts*. September 2015 at 5; Ineos. [Press release]. "Ineos completes the purchase of BASF share of Styrolution". 17 November 2014; Franco, T. "Befesa sells Ineos its desulfurization plant in the port of Bilbao". *Expansión*. 14 January 2016; Ineos. [Press release]. "Ineos O&P USA has acquired WL Plastics". 1 November 2016; Ineos. [Press release]. "Ineos completes acquisition of Inovyn joint venture". 7 July 2016; *Reuters* (17 July 2017); Vaughan (24 May 2017); European Commission. "Mergers: Commission clears acquisition of DONG E&P by Ineos". *European Commission Daily News*. 22 June 2017; Schaps, Karolin. "Engie pulls out of UK shale gas with assets sale to Ineos". *Reuters*. 9 March 2017; Arkema. [Press release]. "Arkema announces the completion of the divestment of its Oxo alcohols business". 2 March 2017.

- 48 Wachman (2009); Beavers, Andy. "The rise and rise of Ineos". *Plastics News Europe*. 16 October 2008.
- 49 *The Telegraph* (2007); "Chemical producer gets \$834M from Ineos for Belgian-based subsidiary". *CNN Money.* 4 October 1999.
- 50 "Barbarians at the gates of Europe". *The Economist*. 16 February 2006.
- 51 Johnson (2007) at 79; Pfeifer (2014).
- 52 Pfeifer (2014).
- 53 Daily Mail (2017).
- 54 Gilmore (2008); *Daily Mail* (2017); Catan, Thomas and Lina Saigol. "BP to sell Innovene to Ineos in \$9bn deal". *Financial Times*. 7 October 2005.
- 55 *The Telegraph* (2007); Greenwood, Al. "Ineos joins US in building next wave of shale projects". *Chemical Industry News and Analysis*. 6 June 2017.
- 56 Marsh (2010).
- 57 Osbourne, Alistair. "Colossal bet on Grangemouth goes sour for Ineos boss". *Daily Telegraph*. 23 October 2013.
- 58 Katakey and Noel (2017); Pfeifer (2014).
- 59 Johnson (2007) at 79; Pfeifer (2014); currency conversion using US Federal Reserve Board data; 2005 loans of \$9 billion amounted to £4.9 billion, and 2007 debt of \$10 billion amounted to £5 billion.
- 60 Marsh (2010).
- 61 Pfeifer (2014).
- 62 "RLPC-Lenders to Ineos' 7 bln euro loan form advisory group". *Reuters*. 4 February 2009; "Ineos lenders to approve key loan vote — sources". *Reuters*. 14 July 2009. Figure of \$9.4 billion in 2008 amounted to £5.1 billion, and \$10.5 billion in 2009 amounted to £6.7 billion.
- 63 Osbourne (23 October 2013).
- 64 Marsh (2010).
- 65 Ineos. [Press release]. "Bilcare AG to acquire INEOS' Global Films business for €100 million". 2 August 2010; Ineos. [Press release]. "INEOS Group completes the sale of its fluorochemicals business to Mexichem Fluor S.A. de C.V., a subsidiary of Mexichem S.A.B. de C.V.". 31 March 2010; "PetroChina completes \$1bn Ineos deal". *The Telegraph*. 4 July 2011; Osbourne (23 October 2013).
- 66 Pfeifer (2014).
- 67 Marsh (2010).
- 68 Osbourne, Alistair. "How US shale gas could re-energise Grangemouth". *The Telegraph*. 8 December 2013.
- 69 EIA. Data Series N9010US2. US Natural Gas Gross Withdrawals (MMcf). US gas withdrawals rose from 24.7 trillion cubic feet in 2007 to 32.7 trillion in 2016 (698.4 billion cubic metres and 924.6 billion cubic metres, respectively); EIA. Data Series N3035US3. US Natural Gas Industrial Price (Dollars per Thousand Cubic Feet). Available at www.eia.gov. Accessed March 2017.
- 70 Katakey and Noel (2017); IHS Markit. [Press release]. "Ineos realigning portfolio, seizing shale gas opportunities to consolidate position as chemical sector giant, IHS Markit says". 7 September 2016.
- 71 IHS Markit (2016).
- 72 Wright, Scott. "Ineos will add 150 jobs at Grangemouth with investment". *The Herald (Scotland)*. 12 June 2017; "Ineos to expand in Europe; investment of US\$2bn". *Energy, Oil & Gas Asia*. 13 June 2017; currency conversion based on Federal Reserve Board. Foreign Exchange Rates — G.5 Monthly. 1 September 2017. Figure of \$2 billion amounted to £1.6 billion.

97

98

99

- 73 Katakey and Noel (2017).
- 74 Ineos. "Why shale gas from the US still works with \$30 oil". Inch Magazine. Iss. 10. July 2016; Brice, Andy. "Voyage of discovery." ICIS Special Supplement/Ineos Supplement. 11-17 April 2016 at 3; Brice, Andy. "A collaborative effort." ICIS Special Supplement/Ineos Supplement. 11-17 April 2016 at 6.
- 75 Ineos Olefins & Polymers Europe. [Press release]. "Ineos Europe and Evergas enter into long-term shipping agreements". 23 January 2013; Brice. "Voyage of discovery" (2016) at 3; Ineos. "Ineos signs second deal to ship more ethane to Europe — and orders more ships." *Inch Magazine*. Iss. 6. 2014; Ineos Olefins & Polymers Europe. [Press release]. "Ineos expands its contract with Evergas to six vessels for the transportation of US shale gas to its European cracker complexes". 7 May 2014. Ineos Olefins & Polymers Europe (2013); Brice. "A collaborative effort" (2016) at 6; Brice. "Voyage of discovery" (2016) at 3; Doyle, William P. "On the docks at Marcus Hook". *Maritime Professional*. 29 February 2016.
- 76 Brice, Andy. "Enter the dragon." ICIS Special Supplement/Ineos Supplement. 11-16 April 2016 at 4; Blum, Jordan. "New dragon ships carry Texas ethane to Europe and beyond". Houston Chronicle. 9 September 2016; "Evergas names seventh LNG-fueled carrier". LNG World News. 26 April 2017; Corkhill, Mike. "LNG fleet is on course for its busiest delivery year". LNG World Shipping. 28 August 2017.
- 77 Brice. "Voyage of discovery" (2016) at 2 to 5.
- 78 "First US ethane shipment docks at Ineos Rafnes complex." ICIS News. 23 March 2016; "Ineos Grangemouth cracker receives first US ethane shipment". ICIS News. 27 September 2016; Corkhill, Mike. "Inaugural US ethane heralds a new gas trade". LNG World Shipping. 18 March 2016; "First shale gas arrives at Ineos plant in Scotland". BBC News. 28 September 2016.
- 79 IHS Markit (2016).
- 80 Ineos. [Press release]. "Ineos plans massive European Expansion Programme". 12 June 2017; Corkhill (2017). In June 2017, \$2 billion amounted to £1.6 billion.
- IHS Markit (2016); Gosden, Emily. "Ineos's fracking dream hits a squall". The Telegraph. 27 September 2016.
- 82 Gosden (2016).
- Kummer, Frank. "Pa. judge temporarily halts Mariner East 2 pipeline drilling construction". *Philadelphia Inquirer*. 25 July 2017; Legere, Laura.
   "Some drilling allowed to resume on Mariner East pipeline after spills". *Pittsburgh Post-Gazette*. 4 August 2017.
- 84 Legere, Laura. "Proposed settlement would allow drilling to resume on Mariner East pipelines". *Pittsburgh Post-Gazette*. 8 August 2017.
- 85 Krowchenko, Leslie. "Opposition to Mariner pipeline is a bipartisan issue". *Times Herald (PA)*. 20 July 2017; Kauffman, Rick. "Opposition to Mariner 2 pipeline is heating up". *Delaware County (PA) Times*. 24 June 2017; Colaneri, Katie. "Tension grows over Sunoco's natural gas liquids pipeline to Marcus Hook". *National Public Radio StateImpact*. 25 April 2014.
- 86 Buchanan, Jill. "Ineos in it for the long haul". *Falkirk Herald*. 27 July 2016.
- 87 Greenwood (2017).
- 88 "Ineos buys 12 North Sea gas fields for £490m". *The Guardian*. 11 October 2015.
- 89 Ineos. "Business profile: Ineos Breagh uncharted waters." Inch Magazine. Iss. 9. 2015.
- 90 Ineos. [Press release]. "Ineos to acquire the North Sea Forties Pipeline System and Kinneil terminal from BP for \$250 million". 3 April 2017; *Reuters* (17 July 2017); US Federal Reserve Board. Foreign Exchange Rates — G.5 Monthly. 1 June 2017. Figure of \$250 million amounted to £198 million in April 2017.
- 91 Ineos (3 April 2017); Katakey and Noel (2017).
- 92 Ineos (3 April 2017).
- 93 Brown, Annie and Charlie Gall. "Fury at billionaire Jim Ratcliffe 'bringing North Sea oil and gas pipelines under his control". *Daily Record*. 16 March 2017.
- 94 Vaughan (24 May 2017).
- 95 Ineos (24 May 2017).
- 96 Vaughan (24 May 2017).

- acker complexes". 7 May 2014. Ineos ; Brice. "A collaborative effort" (2016) at fracking, says academic". *The Times*. 11 February 2017.
  - 103 BBC News (20 November 2014).

100 BBC News (20 November 2014).

101 Macalister and Carrington (2014).

20 November 2014.

ber 2014.

- 104 Ineos ChlorVinyls (2012) at 6.3; Ineos Shale (25 January 2017) at 62.
- 105 Williams, Selina. "U.K. lifts shale ban". Wall Street Journal. 13 December 2012; Starr, Luke. "Controversial gas 'fracking' extraction headed to Europe". The Guardian. 1 December 2010.

Ineos Shale. [Advertising supplement]. "Fracking: What everyone should

Ineos ChlorVinyls. Written evidence submitted to Energy and Climate

Change Committee. UK House of Commons. September 2012 at 5.1;

Macalister, Terry and Damian Carrington. "Billionaire founder of Ineos

wants to start shale gas revolution in the UK". The Guardian. 20 Novem-

"Ineos to invest £640m in UK shale gas exploration". BBC News.

know". Derbyshire Times. 25 January 2017 at 67.

- 106 US National Research Council. National Academies of Science. "Induced Seismicity Potential in Energy Technologies." 2013 at 86 to 87; Clarke, Huw et al. "Felt seismicity associated with shale gas hydraulic fracturing: The first documented example in Europe". *Geophysical Research Letters*. Vol. 41. 22 November 2014 at 1 and 7.
- 107 Williams (2012).
- 108 Vaughan, Adam. "UK support for fracking hits new low". The Guardian. 28 April 2016; Williams, Selina. "U.K. county council rejects Cuadrilla's fracking applications; decision deals blow to U.K.'s nascent shale-gas industry". Wall Street Journal. 29 June 2015; Spereall, David. "Tougher fracking rules are drawn up to protect county". Hull Daily Mail. 24 June 2016.
- 109 "Fracking firm Cuadrilla drilling for shale gas in Lancashire". BBC News.17 August 2017; Schaps (2017); Ineos Shale (25 January 2017) at 65.
- 110 Delebarre, Jeanne et al. UK House of Commons. [Briefing paper]. "Shale Gas and Fracking". 4 January 2017 at 4.
- 111 Keeler, John T.S. "The Politics of Shale Gas and Anti-Fracking Movements in France and the United Kingdom." Chapter 3 in Yongsheng Wang and William E. Hefley, eds. The Global Impact of Unconventional Shale Gas Development: Economics, Policy and Interdependence. Springer: New York, 2015 at 61 to 64; Schaps, Karolin and Susanna Twidale. "UK gives goahead to second-ever shale gas permit". Reuters. 6 October 2016.
- 112 Ineos Shale (25 January 2017) at 65.
- 113 United Kingdom Infrastructure Act. 2015. Chapter 7 §§43-44 at 48 to 49; BBC News (20 November 2014).
- 114 Ineos Shale (25 January 2017) at 67.
- 115 Brooks, Libby. "Scottish parliament votes narrowly in favour of ban on fracking". *The Guardian*. 1 June 2016; Kirkaldy, Liam. "Paul Wheelhouse: Ministers will respect Parliament's view on fracking". *Holyrood*. 31 March 2017; Holder, Michael. "Scottish government launches public consultation on fracking". *The Guardian*. 1 February 2017; Wright, Scott. "Ineos chief makes fresh case for fracking in Scotland". *Glasgow Herald*. 11 July 2016.
- 116 Macdonell, Hamish. "Final decision on fracking years away". The Times. 7 July 2017; Carrell, Severin. "Scottish government bans fracking after public opposition". The Guardian. 3 October 2017; Scottish Parliament. Meeting of the Parliament Official Record. Session 5. 3 October 2017 at 14.
- 117 Ibid.
- 118 Ineos. "Shale gas: the changing game." *Inch Magazine*. Iss. 1. 2011; Macalister and Carrington (2014).
- 119 *BBC News* (20 November 2014); Ineos. "Shale gas: the game changer? Ineos promises to share shale gas revenues with communities." *Inch Magazine*. Iss. 7. 2014.
- 120 Rose (2015); BBC News (20 November 2014); Macalister and Carrington (2014).
- 121 Russell, Greg. "Ineos claims media's 'scare stories' over fracking are distorting the public's perceptions of the issue". *The National (Scotland)*.
  4 May 2016; Behrens, David. "Fracking giant targets Yorkshire village". *Yorkshire Post*. 13 March 2017.

- 122 Russell (2016); Inch Magazine (2014).
- 123 BBC News (20 November 2014).
- 124 Schaps (2017); "French gas giant GDF Suez changes name to Engie". *Reuters*. 24 April 2015.
- 125 Ward, Andrew. "Ineos boosts efforts to bring US-style fracking to UK." *Financial Times.* 9 March 2017.
- 126 "Brexit vote sparked 'shift in tone' on fracking, says Ineos". Horncastle News. 29 August 2017; Ineos Shale (25 January 2017) at 67; Schaps (2017). Food & Water Europe created Ineos shale gas licence map from geospatial petroleum exploration development licence (PEDL) available at the UK Oil & Gas Authority. Oil & Gas Authority Licences ETRS89 data for the shape and location of the licences is available at http://data-ogauthority.opendata.arcgis.com/datasets/2d61f4a83f2c49b68fcb1b8 09978bd63\_0?geometry=-57.706%2C49.226%2C18.671%2C63.598. Accessed July 2017. Food & Water Europe paired, using the PEDL number as reference, the geospatial licence data with the licence cownership data from 2017 available at https://www.gov.uk/guidance/oil-and-gas-licence-data. Accessed July 2017. Map and data on file at Food & Water Europe.
- 127 Schaps (2017).
- 128 Bawden, Tom. "The leader of the frack takes a leap in the dark". *The Independent*. 13 March 2015.
- 129 "Sherwood Forest 'will not be fracked', council says." BBC News. 12 May 2017.
- 130 Ineos Shale (25 January 2017) at 67; Ineos Shale. "Application to Drill a Vertical Core Well Land adjacent to Common Road, near Harthill." Environmental Impact Assessment screening report. March 2017. (Distance measured on Google Maps.)
- 131 Food & Water Europe determined overlap by adding park, river, ruins and cathedral to the Ineos shale gas licence map (see endnote 126, above). Location data downloaded from Open Street Map via Map-Cruizin. Available at http://www.mapcruzin.com/free-england-arcgismaps-shapefiles.htm. Accessed August 2017. Map and data on file at Food & Water Europe.
- 132 Ibid. Ineos Licence Numbers PEDL 184 and 190.
- 133 Ibid. Ineos Licence Number PEDL 210.
- 134 Wright, Greg. "The battle to win hearts and minds in the shale gas debate". Yorkshire Post. 1 March 2016; "North York Moors National Park Management Plan: A Wider View." North Moors National Park Authority. 2012 at 22; "2017 Tourism Update". North York Moors National Park Authority. Item 14. 20 March 2017 at 4.
- 135 Neate, Rupert and Helen Pidd. "Ineos buys fracking rights around Grangemouth and Firth of Forth". *The Guardian*. 18 August 2014; "Flood Risk Management Plan". *Forth Local Plan District*. Section 1. 2009 at 9; Wells, Alan. Comment Submitted to "Talking "Fracking: A Consultation on Unconventional Oil and Gas". *Fisheries Management Scotland*. 31 May 2017.

- 136 Ineos [Personal name redacted] letter to Stephen Longrove. UK Department of Energy & Climate Change. 26 June 2013 at 6. Result of Freedom of Information Act request to UK Department of Energy & Climate Change.
- 137 Vaughan, Adam. "Fracking firm Ineos leads industry lobbying to avoid green tax". *The Guardian*. 3 April 2017.
- 138 Sanderson, Daniel. "SNP told to practice what it preaches on openness". *The Herald*. 12 October 2016.
- 139 Stacey, Kiran and Mure Dickie. "Fracking company Ineos to woo SNP at conference". *Financial Times*. 1 October 2015.
- 140 Wright, Greg (2016).
- 141 Russell (2016).
- 142 Behrens (2017).
- 143 Rose (2015).
- 144 Russell (2016); Ineos Shale (25 January 2017) at 68.
- 145 Macalister and Carrington (2014); Russell (2016); Ineos Shale (25 January 2017) at 68.
- 146 Ineos Shale (25 January 2017) at 68.
- 147 Rowell, Andy. "UK fracking firm plans to dump wastewater in the sea". *The Guardian*. 15 June 2016.
- 148 Jackson (2014) at 2051.
- 149 Ineos Shale (25 January 2017) at 64 and 68.
- 150 Ineos ChlorVinyls (2012) at 7.
- 151 Ineos Shale (25 January 2017) at 63.
- 152 Macalister and Carrington (2014); Ineos Shale (25 January 2017) at 62; Tovey, Alan. "Ineos offers £2.5bn to communities disrupted by shale gas". *The Telegraph*. 28 September 2016.
- 153 Macalister and Carrington (2014); Musson, Chris and Andrew Nicol. "I'm nat perfect". *The Sun*. 17 October 2015.
- 154 Jones, Alan. "Ineos threatens to sue National Trust so it can carry out fracking survey on its land". *The Independent*. 20 July 2015; Kennedy, Dominic. "We'll take the National Trust to court, warns fracking firm". *The Times*. 6 February 2017 at 22; Webster, Brian. "National Trust and fracking firm square up over test ban on estate". *The Times*. 13 June 2017.
- 155 Ward, Andrew. "Ineos wins injunction against shale protestors". *Finan-cial Times*. 31 July 2017; UK High Court of Justice, Chancery Chambers. Ineos Upstream Limited et al. and Persons Unknown et al. HC-2017-002125. 20 September 2017 at 11.
- 156 Ineos Upstream Ltd. et al. and Persons Unknown (2017) at 16.

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