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IX.7 The International Energy Agency

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Abstract

The International Energy Agency (IEA) is a creature of crisis. Understanding the organisation – how it is set up and how it acts – thus first requires understanding of what the IEA perceives itself to be, a perception intrinsically linked to its formative moments. Accordingly, while protecting the environment, developing alternative sources of renewable and clean energy, and making efforts to reduce energy consumption are all included in the foundational Agreement on an International Energy Program, they do not feature very prominently. Instead, their inclusion must be understood, at least at the outset, as being motivated by concerns of over-dependency on foreign oil, most notably from OPEC countries. Nevertheless, while the IEA still has a key energy security function, the role of the organisation itself has evolved – encouraging states to adopt policies to improve all aspects of the energy trilemma in the coming decades is representative of this evolution. This chapter traces this evolution, analysing the extent to which the IEA offers meaningful leadership in balancing the three arms of the trilemma, and identifying any weaknesses in this regard. In so far as any such weaknesses exist, the chapter concludes by identifying opportunities for further research that could attempt to address them.

Keywords

International Energy Agency, International Energy Program, oil and gas law, energy trilemma

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IX.7.1 Introduction

The International Energy Agency (IEA) is a creature of crisis. Whereas the foundational emergency was one of energy security, the IEA's future relevance will be determined by its ability to respond to the complexity of the energy trilemma: the simultaneous demands of energy security, affordability and sustainability.

IX.7.2 History

The early 20th century brought a general shift among consumer nations away from coal as the primary energy source, and towards oil instead. This development meant that many economies became exposed to increasing import dependence, largely from newly-independent nations in the Middle East. The lack of alignment between the interests of nations in each region was an issue that bubbled away below the surface post-World War II. While the 1973 embargo by members of the Organization of Petroleum Exporting Countries (OPEC) in the aftermath of the Arab–Israeli War of 1973 is perhaps the most well-known, it was not the first time that oil supply had been used as a tool for foreign policy. Unsuccessful, embargoes had been attempted in response to the Suez crisis in 1956, and following the Yom Kippur War in 1967. What made the difference in 1973 were the ongoing production cuts by the impacted countries, which left them more exposed than they had been in previous years. Whereas targeted action against specific countries could previously be compensated by increased production elsewhere (notably the United States), a persistent reduction in supply to the market from key producers resulted in a price hike so severe that it tipped oil consuming nations into the string of recessions that came to characterise the 1970s. It is because of this that 1973 is now routinely referred to as the year of the First Oil Shock. While the price of a barrel of oil only increased by about 9 USD per barrel (USDpb), from around 3 USDpb to around 12 USDpb, it must be appreciated that this represented a 300 per cent price increase over a very short period of time.¹ That the consumer nations had come to rely so heavily on cheap and plentiful supplies of oil and thus lacked diversity in their energy arrangements only exacerbated the impact of the OPEC action. Furthermore, whereas the OPEC action was the very embodiment of a harmonised approach, the consumer nations struggled to match that unity of purpose. Not least among the problems facing consumer governments as well as private sector entities at this time was a dearth of useful market information.

As wake-up calls come, this was a stark one. Indeed, its significance was such that it provided the impetus for the very rapid establishment of the IEA, on the basis of a broad consensus that future coordination would be necessary, and would have to be based on a permanent institutional structure. The Organisation for Economic Co-operation and Development (OECD) provided the infrastructure for the new body, indicating that it would accommodate it as one of its independent agencies. It is notable that the OECD is itself a creature of crisis, having evolved from the earlier Organisation for European Economic Co-operation, which had been established in the aftermath of World War II to manage US assistance to Europe in the context of the Marshall Plan. For all its considerable experience, the OECD nevertheless lacked the expertise in relation to energy specifically to allow it to provide leadership at the time of the First Oil Shock.

The initial impetus for what would eventually become the IEA came from US Secretary of State Henry Kissinger, who proposed the creation of an ‘Energy Cooperation Group’, to count among its members capitalist industrialised nations in North America, Europe and Japan. Aimed more at countering the growing imbalance in the supply of and demand for oil than on the ongoing crisis, Kissinger’s idea gained acceptance from other governments. Discussions throughout 1974 led to the Agreement on an International

¹ Issawi (1978) 15–16.

Energy Program (IEP),² the founding document of the IEA, which was signed in Paris before the end of the year. Following formal recognition by the OECD, the IEA was established.

IX.7.3 Agreement on an International Energy Program

The preamble to the IEP sets out clearly the key concerns and objectives of consumer governments at that time, including the desire 'to promote secure oil supplies on reasonable and equitable terms'; to 'promote co-operative relations with oil producing countries and with other oil consuming countries'; and to 'play a more active role in relation to the oil industry by establishing a comprehensive international information system and a permanent framework for consultation with oil companies'. Additionally, there was a determination 'to take common effective measures to meet oil supply emergencies by developing an emergency self-sufficiency in oil supplies, restraining demand and allocating available oil among their countries on an equitable basis'; and a stated aim for members 'to reduce their dependence on imported oil by undertaking long-term co-operative efforts on conservation of energy, on accelerated development of alternative sources of energy, on research and development in the energy field and on uranium enrichment'.³

A number of important issues are immediately apparent in addition to the core considerations for which the IEA has become best known. The IEP shows a willingness of the consumer nations to look for common ground with producers, the importance placed on diversifying oil supplies, and an emphasis on diversifying energy sources generally. In relation to the first of these, the drive to improve relations with suppliers, it is interesting to note the wording of Article 2 of the 1961 OPEC Statute.⁴ Article 2 of the OPEC Statute specifically highlights 'ensuring the stabilization of prices in international oil markets with a view to eliminating harmful and unnecessary fluctuations' as a fundamental reason for the organisation's existence. Continuing, Article 2 of the OPEC Statute notes that:

Due regard shall be given at all times to the interests of producing nations and to the necessity of securing a steady income to the producing countries; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on their capital to those investing in the petroleum industry.

These are sentiments that would not be out of place coming from the mouth of the most ardent supporter of well-regulated markets.⁵

The diversification of oil supplies, in tandem with the increased per-barrel price of oil (a situation exacerbated by the Second Oil Shock in 1979), gave a much needed boost to ongoing oil exploration efforts in higher-cost areas, such as the North Sea and Alaska. While interest in nuclear power and renewable sources was already present before OPEC

² Agreement on an International Energy Program (adopted 18 November 1974, entered into force 19 January 1976) 1040 UNTS 271 (IEP).

³ *ibid* preamble.

⁴ OPEC, 'Statute of the Organization of Petroleum Exporting Countries' (OPEC Statute) (OPEC, 2012) <https://www.opec.org/opec_web/static_files_project/media/downloads/publications/OPEC_Statute.pdf> accessed 13 November 2019.

⁵ For more details on OPEC and Article 2 of the OPEC Statute, see: Chapter 6.

action in 1973, an additional boost came through emergent concerns about energy security, alongside a more favourable competitive environment that had come to exist *because of* higher oil prices.

Taken together, these issues demonstrate that interactions between producer and consumer nations – now given a more formal structure through the IEA – were by no means a zero sum game. Each side recognised explicitly that there was a mutual interest in not putting undue pressure on the other. Furthermore, OPEC nations realised that in using oil as a geopolitical weapon, any short-term gain (if any had even been realised) had been more than counterbalanced by the long-term cost of creating an environment conducive to the emergence of competitors both within the oil market and in the energy market generally.

The IEP also established an information system on the international oil market, which has both ‘general’ and ‘special’ sections.⁶ Under the former, participating countries must regularly provide the IEA with ‘precise data’ on oil companies operating within their jurisdiction, regarding, *inter alia*, corporate and financial structure, capital investments, licence or contractual terms for access to reserves, current and projected rates of production, allocations and stocks, costs of crude and products, prices, and ‘such other issues as may be determined’.⁷ Under the latter section, participating countries must provide the IEA with data on, *inter alia*, oil consumption and supply, demand restraint measures, emergency reserves, transport facilities, and current and projected levels of supply and demand, etc.⁸ Furthermore, the Agreement established a permanent framework for consultation with oil companies, through which participating countries may consult with and request information from such companies ‘on all important aspects of the oil industry’, and share such information with other participating countries.⁹ The importance of all these arrangements becomes clear in the context of an emergency, when the effective operation of the relevant measures will depend to a considerable extent on the availability of accurate and trustworthy information. The collection of such data also has positive implications for the proper functioning of the market in normal conditions, and thus perhaps also decreases the risk of supply shocks arising from less deliberate actions, such as natural disasters.

Consistent with the determination expressed in the preamble to reduce dependence on imported oil, under the IEP, participating countries agree to ‘undertake national programs and promote adoption of co-operative programs’.¹⁰ For the purpose of promoting long-term co-operation programmes, the Standing Group on Long Term Co-operation (SLT) was established and charged with examining co-operative action within the IEA, reporting to the IEA’s management committee. This co-operative action focuses on a few particular areas: the conservation of energy; the development of alternative sources of energy (with domestic oil, coal, natural gas nuclear and hydro being offered as examples) and including co-operative programmes on ‘criteria, quality objectives and standards for environmental protection’; energy research and development, with a variety of priority

⁶ IEP art 25(1).

⁷ IEP art 27(1).

⁸ IEP arts 32(1), 33.

⁹ IEP art 37.

¹⁰ IEP art 41(2).

co-operative programmes identified in coal, solar, radioactive waste management, fusion, hydrogen, nuclear safety, waste heat, conservation, waste utilisation for energy conservation and overall energy system analysis; and uranium enrichment.¹¹

IX.7.4 The IEA in action – CRM and CERM

Arguably the IEA's core functions (in the context of the IEP) relate directly to the idea of energy co-operation, with more emphasis placed on emergency response mechanisms than on long-term co-operation (though the latter may serve as the basis for the former). The IEA put into place arrangements to ensure that an effective emergency response can be mounted against any future oil supply shock affecting participating countries, whatever its cause. These arrangements aim to tackle both the supply and demand sides.

The IEP maintains a number of demand response mechanisms, ranging from information provision through to rationing, in the event of the programme's activation. The most important demand restraint measure features in Chapter II of the IEP. Each participating country is required to create and maintain at all times national demand restraint programmes.¹² These national programmes are reviewed and assessed by the IEA Standing Group on Emergency Questions (SEQ), and are matched with the effectiveness of measures taken.¹³

To shore-up supply, all participating countries had to be self-sufficient in the event of an emergency. In practice, this entails an obligation to hold reserves equivalent to 60 (later increased to 90) days of net oil imports, with adjustments made for countries with domestic production.¹⁴ In the case of a supply challenge to an individual country, oil from other participating countries is allocated to the challenged country. Chapter III of the IEP is dedicated to the allocation of available oil supplies amongst IEA contracting parties in case of emergency. This is the Coordinated Response Mechanism (CRM), which includes the more specific IEA Emergency Sharing System. The CRM consists of a number of clearly defined preparation measures and rules for responses in emergencies – a step-by-step plan to be followed should severe supply disruptions occur.¹⁵

The specific measures are set out in the first four chapters of the IEP. Chapter I concerns emergency self-sufficiency; Chapter II describes demand-restraint measures; Chapter III governs allocation in case of oil shortages; and Chapter IV features the activation criteria and associated thresholds. Emergency self-sufficiency may be achieved in three ways, each of which is subject to complex technical considerations. Countries can maintain oil stocks in the form of crude oil in tanks, or in refined product and unfinished oils. Given that these oil stocks may default upon activation, countries must maintain 10 per cent more oil stocks than required (essentially 100 days, not 90 of inland consumption).¹⁶ Demonstrating adequate fuel switching capabilities – the ability to switch energy consumption from oil to other fuels in case of emergencies – can be used to bypass this requirement. While this might be of interest to some countries, it is

¹¹ IEP art 42(1)(a–d).

¹² IEP art 5(1).

¹³ IEP art 5(2).

¹⁴ IEP art 2(1).

¹⁵ Willenborg, Tönjes and Perlot (2004) 32.

¹⁶ *ibid* 33.

doubtful whether this can be achieved at scale, given the versatility of oil and its wide usage in industrialised countries in everyday life. The third method of demonstrating self-sufficiency in an emergency is through the provision of stand-by oil production capacity, which would allow a country to produce oil beyond their normal production rates. This alternative can be quite expensive, and domestic oil sources are a prerequisite for it.

Chapter II describes demand-restraint measures, as mentioned previously. IEA countries are obliged to apply a strict programme to bring demand down to pre-determined levels. This, however, depends on quite specific demand patterns and is, hence, not spelled out per country in the IEP.¹⁷

Not all countries will be equally hit by a supply crisis, and for that reason Chapter III establishes a direct and legally binding allocation mechanism amongst contracting countries. It consists of a framework for calculating whether a country is entitled to additional supplies, or whether a country must make its own supplies available to other countries.

Per Chapter IV of the IEP, both demand and supply measures will be activated whenever the group as a whole or any participating country sustains or can reasonably be expected to sustain a reduction in its oil supplies.¹⁸ The question of just how much of a reduction is necessary to trigger the system has become the crunch point of the IEP over recent decades.¹⁹

The IEP itself states that measures must be activated where all countries or one individual country could reasonably be expected to be exposed to a 7 per cent reduction in the daily rate of its oil supplies, or a 7 per cent reduction in the average daily rate of its final consumption.²⁰ While such a level of disruption has not yet materialised,²¹ countries have nonetheless found that the trigger itself is a bit sticky. In 1980, IEA Executive Director Ulf Lantzke directed IEA Heads of Delegation to the fact that, while politically motivated disruptions, war, other hostile activities and natural disasters were covered, fluctuations of supply due to natural market forces, operational difficulties of the industry and strikes in producer countries were not.²² This assessment was soon confirmed during the oil supply crises of 1979–1981, during which contracting countries that experienced reductions in supply rates below the 7 per cent level nonetheless found themselves under significant economic strain.²³ As a result, in July 1984 the IEA issued the Decision on Stocks and Supply Disruptions – more commonly known as the Coordinated Emergency Response Mechanism (CERM).

The CERM is meant for disruptions that could potentially lead to severe economic damage, regardless of the actual size of the disruption, thus lifting the 7 per cent trigger criterion. The CERM is more flexible than the CRM in the sense that it is not a comprehensive step-by-step guide on what to do in case of an (imminent) oil supply disruption. Instead, the IEA and its contracting countries endeavour to take decisions on

¹⁷ *ibid* 34.

¹⁸ IEP art 12.

¹⁹ Wilson (2016) 2.

²⁰ IEP arts 13, 17.

²¹ Wilson (2016) 2.

²² Scott (1994) 89.

²³ Willenborg, Tönjes and Perlot (2004) 37.

crises as they emerge. The CERM itself only recommends measures that could be taken, with these measures mainly focusing on coordinated drawing of oil stocks and demand restraint. Further possible measures include short-term fuel switching and increased indigenous production.²⁴

Interestingly, a debate among scholars persists as to whether the CERM has been used in the past. While some scholars affirm that the CERM has been successfully activated on three occasions,²⁵ others claim that it has not yet been formally used – though acknowledging that during the Gulf War of 1991 millions of barrels were made available to the markets in a coordinated manner.²⁶ The difficulty originates in the informal set-up of the CERM, wherein boundaries between official activation and informal coordination are blurred. Whichever position is taken, it is clear that the increased coordination and co-operation amongst countries, stimulated by the establishment of the CERM, has been instrumental in avoiding major supply disruptions over the last 35 years.

IX.7.5 The emerging environmental dimension

The previous sections make it evident that, at its outset, the focus of the IEA was very much on energy security, with environmental issues receiving a passing mention and otherwise forming an adjunct to those aspects of the IEP dealing with the development of alternative sources of energy which are low or zero-carbon in operation. Over time, however, environmental issues have increasingly come to the fore – and while environmental considerations have not overtaken energy security as the core mission, their prominence can be well-justified by ongoing concerns regarding the diversification of energy sources. A few of these developments are worth mentioning, chief among these being the SLT's incorporation of the goal of 'encourag[ing] co-operation among IEA member countries on policies to [. . .] reduce greenhouse gas emissions', which illustrates a clear move towards targeting environmental issues.²⁷ Also of note are the establishment of the Energy Efficiency Working Party (EEWP) within the SLT, and the establishment of the Committee on Energy Research and Technology (CERT). Since 2013, the CERT has co-operated with the SLT on matters relevant to environmental protection through annual workshops. These workshops have focused on future power systems (2013), the role of energy technology and innovation in combatting climate change (2014), the role of energy technology innovation and urban energy systems for long-term energy sustainability (2015), and energy technology and policy post-COP21 (2016).

In view of these developments, it may not appear unreasonable for the IEA to describe itself today as being 'at the heart of global dialogue on energy', and as 'providing authoritative analysis'.²⁸ The IEA's efforts in another beneficial project, Tracking Clean

²⁴ *ibid* 38–39; IEA, 'How Does the IEA Respond to Major Disruptions in Oil Supply?' (*IEA*, 10 March 2011) <<https://www.iea.org/newsroom/news/2011/march/how-does-the-iea-respond-to-major--disruptions-in-the-supply-of-oil-2011-03-10-.html>> accessed 27 November 2019.

²⁵ Wilson (2016) 2.

²⁶ Willenborg, Tönjes and Perlot (2004) 39.

²⁷ IEA, 'Standing Group on Long-Term Co-Operation' (*IEA*) <<https://www.iea.org/about/structure/slt/>> accessed 28 November 2019.

²⁸ <<https://www.iea.org/about/mission>> accessed 13 January 2020.

Energy Progress, and the development of the Sustainable Development Scenario, serve to reinforce this analysis.

IX.7.6 Contemporary debates on the IEA and its future

It is questionable, however, whether this positive self-image is shared by external observers. There is clearly widespread interest in the often useful data collected by the IEA, especially when compiled into ‘Outlook’ and ‘Scenarios’ publications. Its activities in these regards, however, have not been without criticism. Even in its core area (monitoring and forecasting oil supplies), critics have noted variations in succeeding years, indicating significant changes back and forth in the underlying optimism or pessimism of the organisation. Research conducted by Miller suggests that there is little to no factual basis for the IEA’s apparent mood swings,²⁹ with concerns raised that IEA forecasts have tended towards over-optimism.³⁰ Whether these apparent mood swings may be explained by a bias in favour of the status quo has latterly been examined by Gaede and Meadowcroft.³¹ These concerns are not restricted to the oil dimension of the IEA’s assessments and outlooks. Armendáriz-López and others have suggested that the IEA’s Methodology Guidelines on Life Cycle Assessment of Photovoltaic Electricity (2009, 2011 and 2016) in most cases provide only ‘simplified calculations at the expense of accuracy’ – this despite the purpose of such publications being to allow for precise assessments.³²

These specific concerns, and the wider belief that these issues indicate an organisation in danger of becoming irrelevant, are not unanimously held. Van de Graaf argued, in the aftermath of the controversies noted by Miller above, that the IEA was still the most important multilateral organisation for energy-importing countries³³ – although he accepted that the context within which the IEA operates has changed dramatically since its inception. Among the emergent issues to be considered, Van de Graaf noted the rise of significant new energy consumers (*e.g.* India and China), new energy-related challenges (*e.g.* the climate change agenda), and finding new international energy fora where these issues could be discussed.³⁴ Van de Graaf suggests that, in light of these emergent issues, the IEA must reconsider both what it seeks to do and how it seeks to achieve it. Through a SWOT analysis, Van de Graaf identifies a need for the IEA to, *inter alia*, seek ‘stronger engagement with new consumers, rapprochement with OPEC, [and] becom[e] a leading voice in the energy transition’.³⁵

Arguing more explicitly for the integration of the energy security and climate change agendas, Heubaum and Biermann’s analysis of the changing activities of the IEA in recent years reveals that governance integration – both within global energy governance and between global energy and climate governance – is already taking place.³⁶

²⁹ Miller (2011) 1573.

³⁰ *ibid* 1572.

³¹ Gaede and Meadowcroft (2016) 623–624.

³² Armendáriz-López and others (2018) 1566.

³³ Van de Graaf (2012) 233.

³⁴ *ibid* 237, 239.

³⁵ *ibid* 239–240.

³⁶ Heubaum and Biermann (2015) 229, 238–239.

This can be seen in the expanded range of the IEA's activities mentioned above, the establishment of the EEWP and the CERT, and in the relationships it has developed with the UNFCCC and with the International Renewable Energy Agency (IRENA). Furthermore, the authors argue that the IEA 'has become an authoritative advocate for the inter-related goals of a low-carbon transition and climate change mitigation'.³⁷ Interestingly, Heubaum and Biermann show that these developments are not the result of a top-down plan, but have rather emerged through the IEA's various efforts to pursue its energy-centric mandate in a fast-changing global policy environment.³⁸ The big challenge posed to the IEA is, thus, to maintain their trusted oil emergency systems for contracting parties, while also increasingly supporting and governing the current energy transition, and paying more attention to the issue of climate change.

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³⁷ *ibid* 229, 236.

³⁸ *ibid* 230.