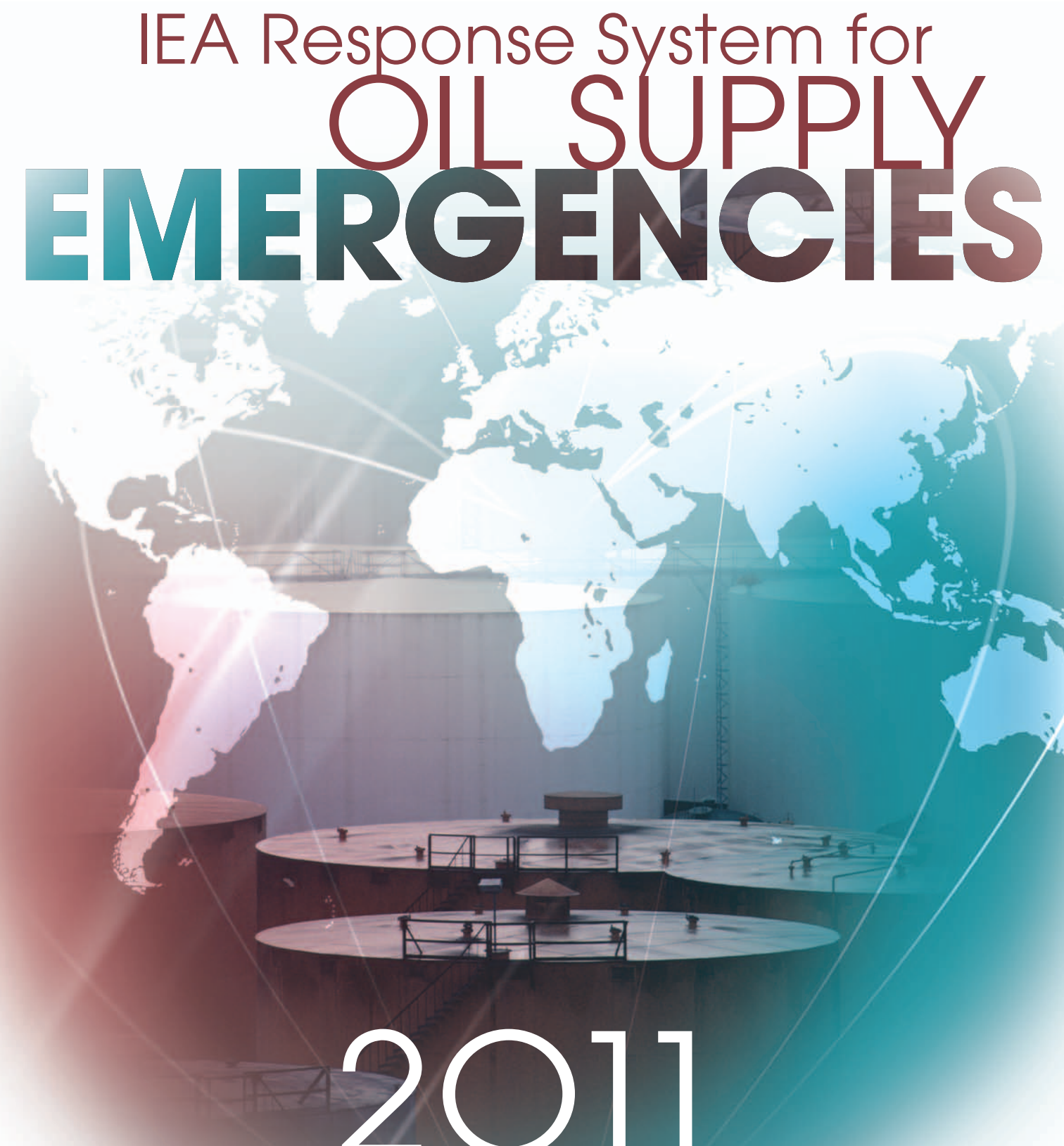
International Energy Agency

IEA Response System for OIL SUPPLY EMERGENCIES



2011

IEA MEMBER COUNTRIES

Australia

Austria

Belgium

Canada

Czech Republic

Denmark

Finland

France

Germany

Greece

Hungary

Ireland

Italy

Japan

Korea (Republic of)

Luxembourg

Netherlands

New Zealand

Norway

Poland

Portugal

Slovak Republic

Spain

Sweden

Switzerland

Turkey

United Kingdom

United States

These countries are members of the Organisation for Economic Co-operation and Development (OECD), as the IEA is an autonomous agency linked with the OECD.

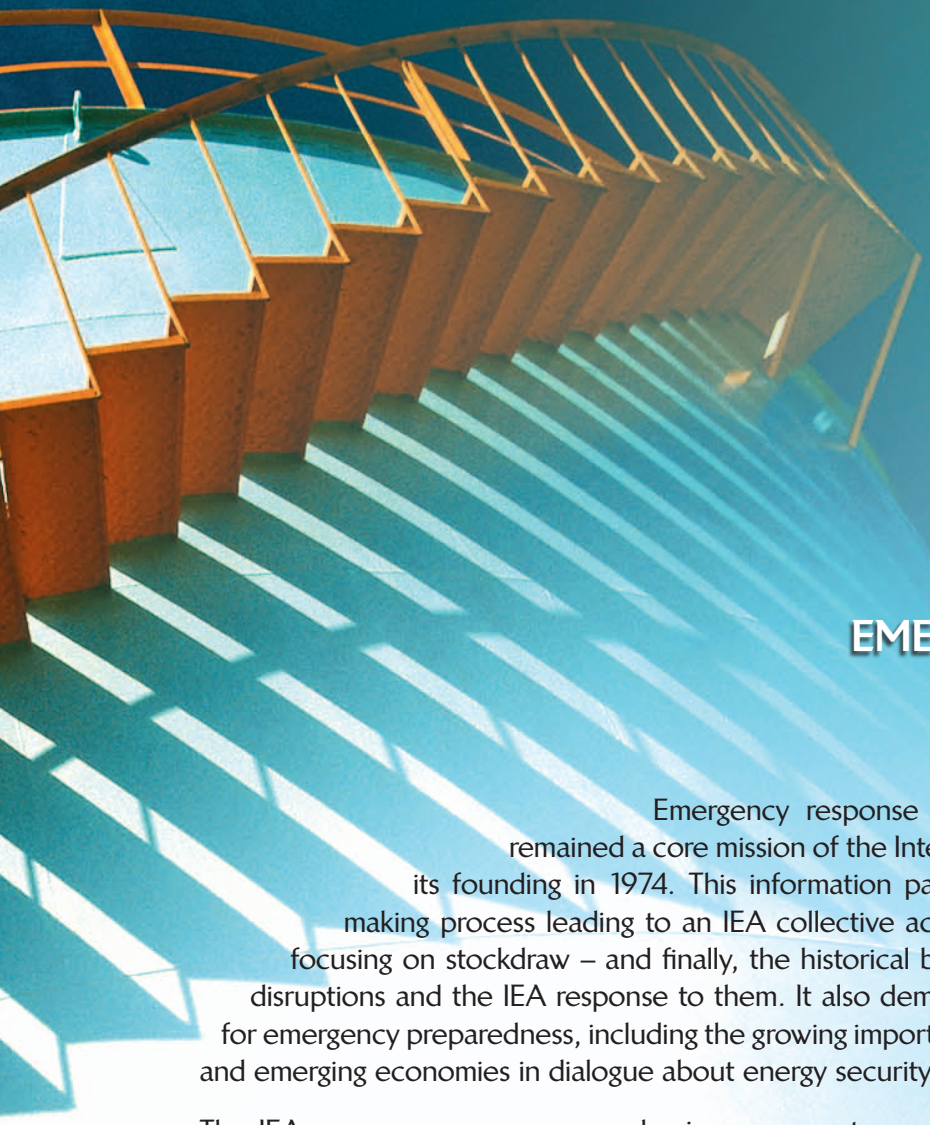
The European Commission also participates in the work of the IEA.

The International Energy Agency (IEA) is the energy forum for 28 industrialised countries. IEA member country governments are committed to taking joint measures to meet oil supply emergencies. They also have agreed to share energy information, co-ordinate their energy policies and co-operate in the development of rational energy programmes. These provisions are embodied in the Agreement on an International Energy Program, the treaty pursuant to which the Agency was established in 1974.

TREATY OBJECTIVES

- To maintain and improve systems for coping with oil supply disruptions.
- To promote rational energy policies in a global context through co-operative relations with non-member countries, industry and international organisations.
- To operate a permanent information system on the international oil market.
- To improve the world's energy supply and demand structure by developing alternative energy sources and increasing the efficiency of energy use.
- To promote international collaboration on energy technology.
- To assist in the integration of environmental and energy policies.

For more information, please contact the Emergency Policy Division of the IEA via e-mail (epd@iea.org).



ABOUT IEA EMERGENCY RESPONSE

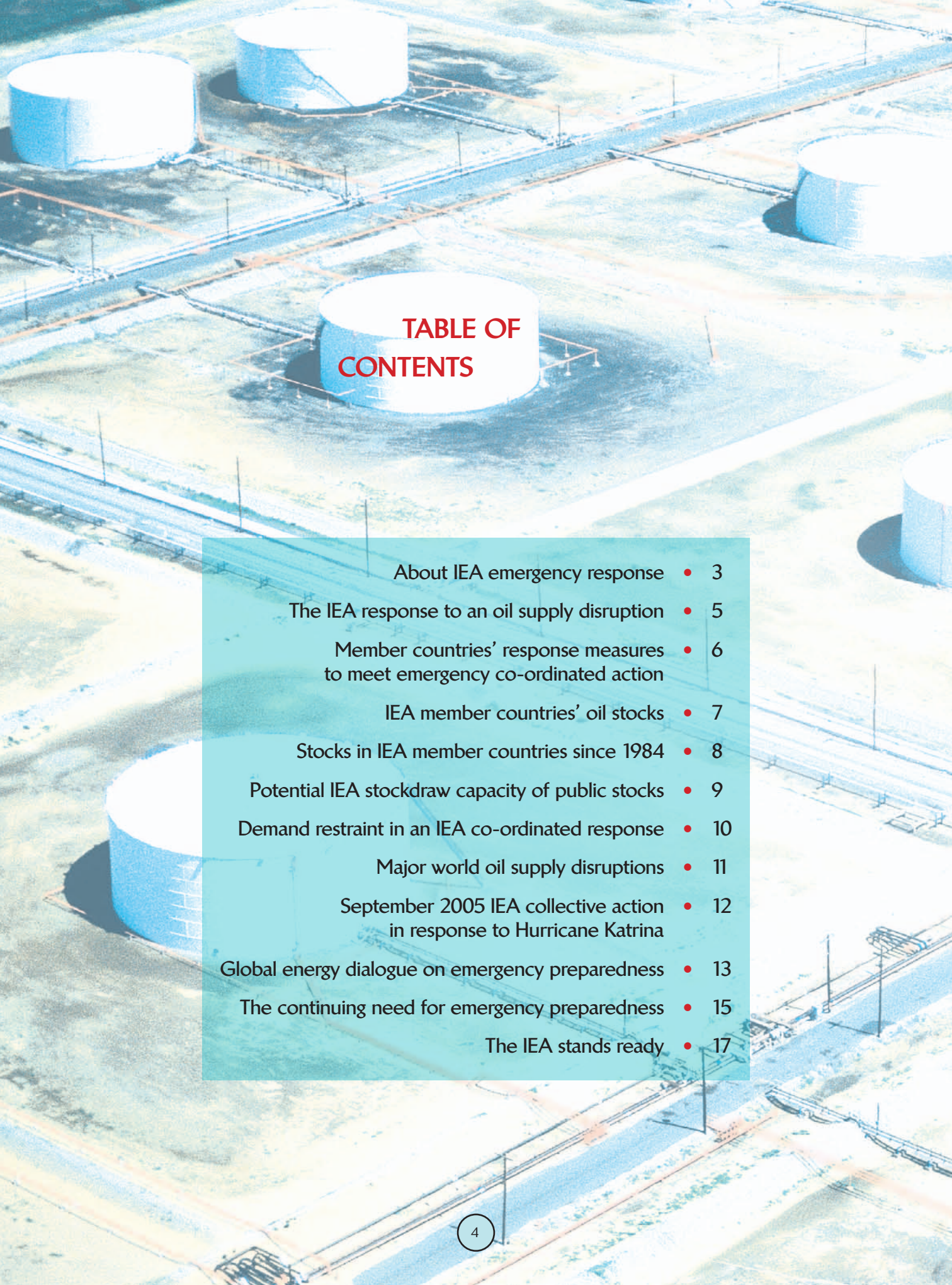
Emergency response to oil supply disruptions has remained a core mission of the International Energy Agency since its founding in 1974. This information pamphlet explains the decision-making process leading to an IEA collective action, the measures available – focusing on stockdraw – and finally, the historical background of major oil supply disruptions and the IEA response to them. It also demonstrates the continuing need for emergency preparedness, including the growing importance of engaging key transition and emerging economies in dialogue about energy security.

The IEA emergency response mechanisms were set up under the 1974 Agreement on an International Energy Program (I.E.P. Agreement). The I.E.P. Agreement requires IEA member countries to hold oil stocks equivalent to at least 90 days of net oil imports and – in the event of a major oil supply disruption – to release stocks, restrain demand, switch to other fuels, increase domestic production or share available oil, if necessary.

To supplement the mechanisms defined in the I.E.P. Agreement, the IEA has elaborated flexible arrangements for co-ordinated use of stockdraw, demand restraint and other measures which could be implemented in response to a disruption in oil supplies.

IEA collective response actions are designed to mitigate the negative impacts of sudden oil supply shortages by making additional oil available to the global market through a combination of emergency response measures, which include both increasing supply and reducing demand. Although supply shortages may bring about rising prices, prices are not a trigger for a collective response action, as these can be caused by other factors and the goal of the response action is to offset an actual physical shortage, not react to price movements.

Close dialogue and co-operation are maintained with consuming countries that are not member countries of the IEA and collective actions are taken in co-ordination with major producing countries.



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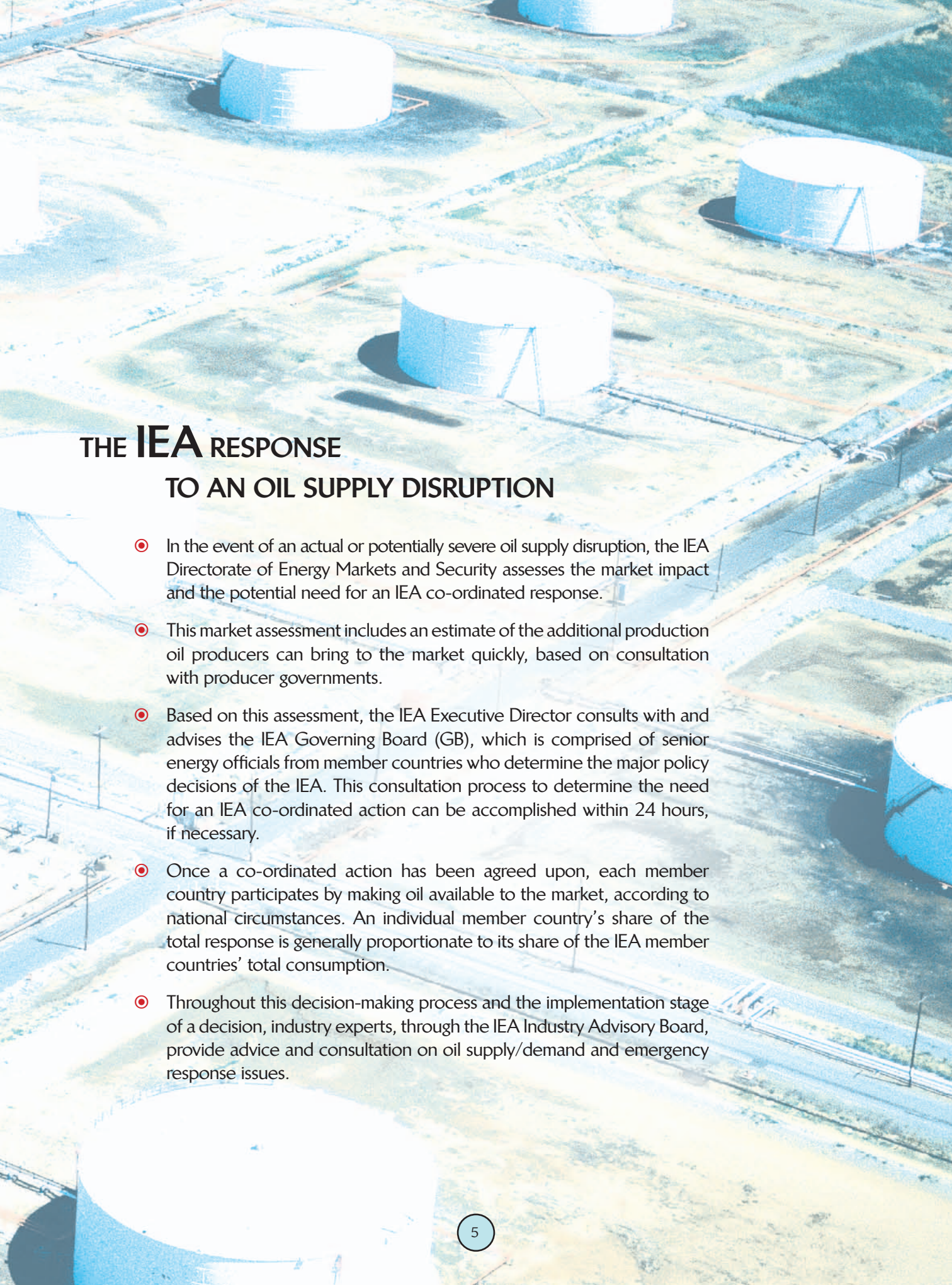
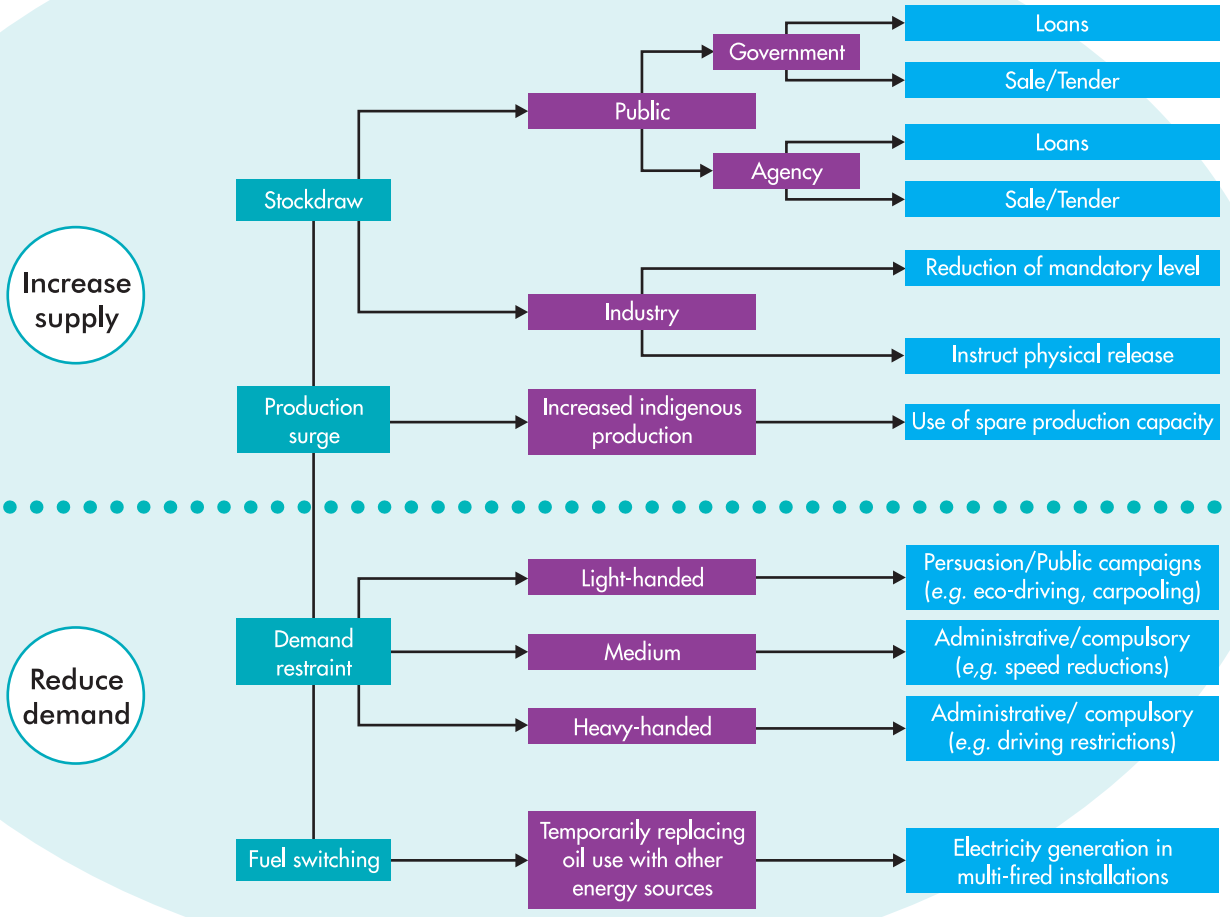


THE IEA RESPONSE TO AN OIL SUPPLY DISRUPTION

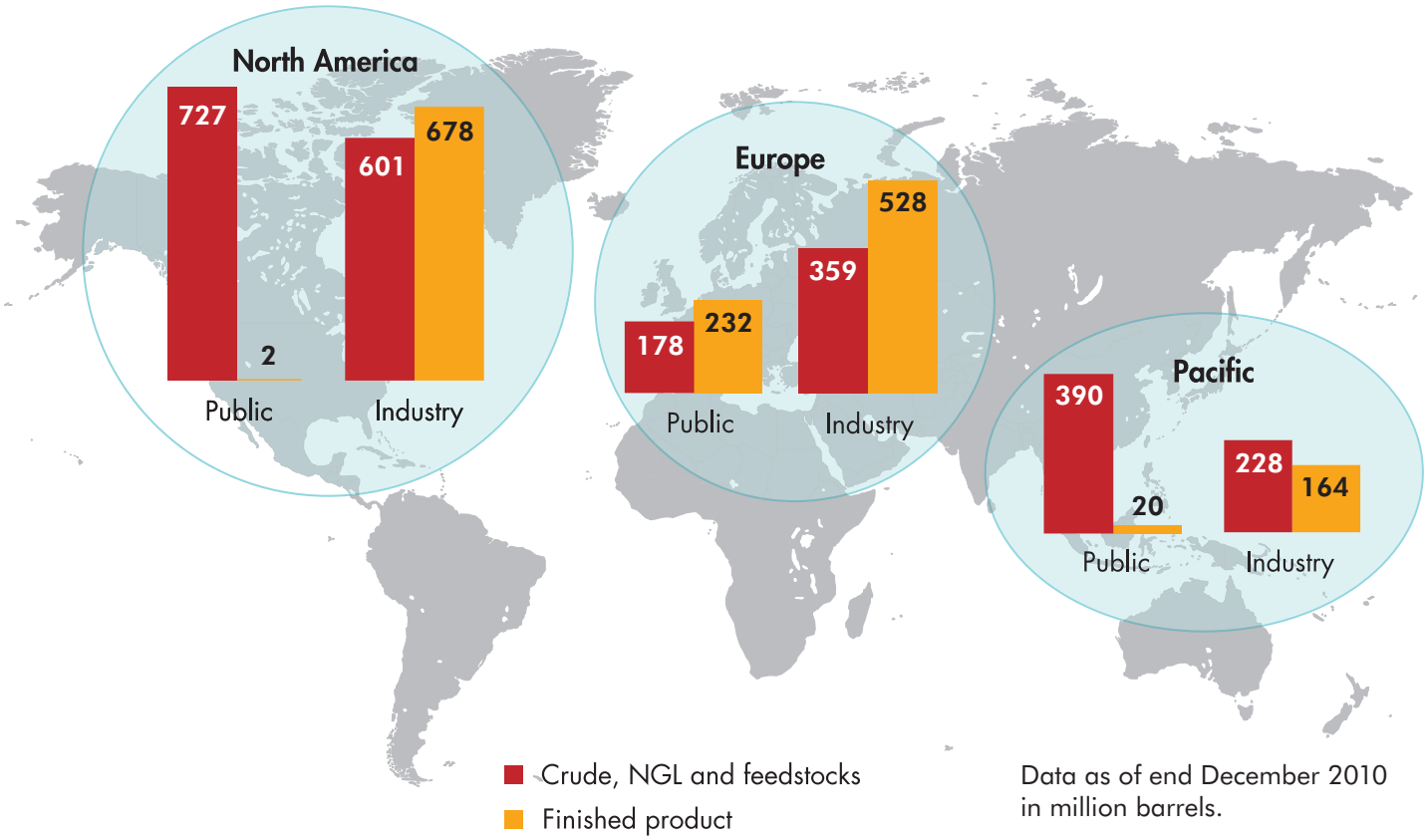
- In the event of an actual or potentially severe oil supply disruption, the IEA Directorate of Energy Markets and Security assesses the market impact and the potential need for an IEA co-ordinated response.
- This market assessment includes an estimate of the additional production oil producers can bring to the market quickly, based on consultation with producer governments.
- Based on this assessment, the IEA Executive Director consults with and advises the IEA Governing Board (GB), which is comprised of senior energy officials from member countries who determine the major policy decisions of the IEA. This consultation process to determine the need for an IEA co-ordinated action can be accomplished within 24 hours, if necessary.
- Once a co-ordinated action has been agreed upon, each member country participates by making oil available to the market, according to national circumstances. An individual member country's share of the total response is generally proportionate to its share of the IEA member countries' total consumption.
- Throughout this decision-making process and the implementation stage of a decision, industry experts, through the IEA Industry Advisory Board, provide advice and consultation on oil supply/demand and emergency response issues.

MEMBER COUNTRIES' RESPONSE MEASURES TO MEET EMERGENCY CO-ORDINATED ACTION

- Member country governments have different options of how best to meet their countries' share of additional oil to be made available to the market by implementing a combination of emergency response measures which increase supply and/or reduce demand.
- The release of stocks is a major aspect of an IEA action. Member countries are required to maintain total oil stock levels equivalent to at least 90 days of the previous year's net imports.
- Member countries are also required to have demand restraint programmes in place which can be implemented in a crisis to free up supply through reduced consumption.
- Surge production and fuel switching are additional measures available to member countries to bring relief to markets during a supply disruption. However, decreasing capacity to switch fuels in power generation or transportation and limited surge production capability now make these response measures less viable.



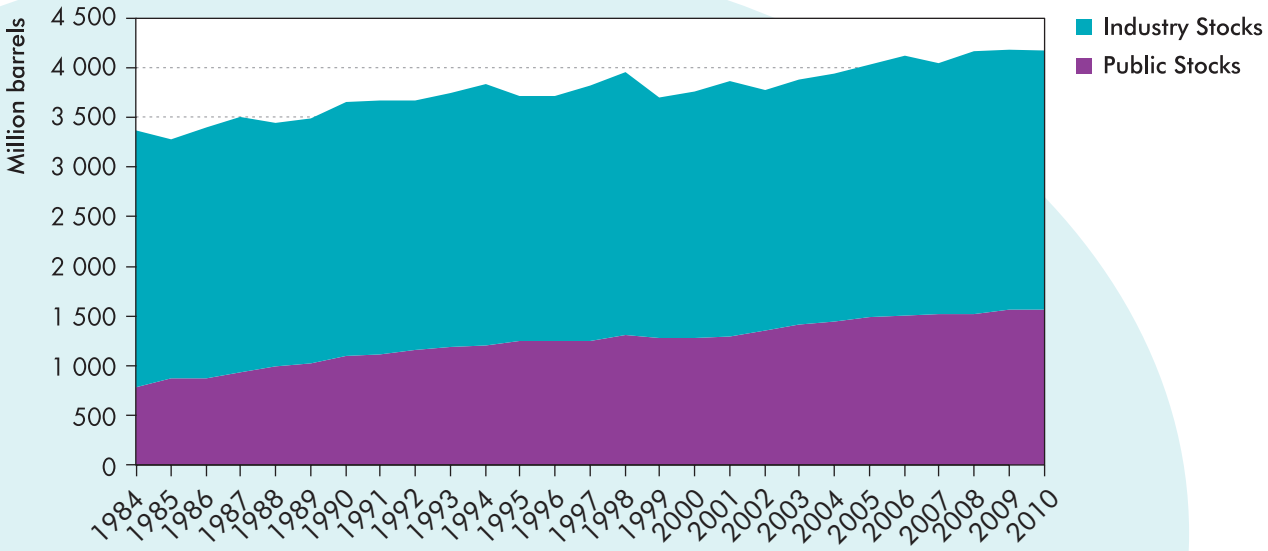
IEA MEMBER COUNTRIES' OIL STOCKS



Data as of end December 2010 in million barrels.

- At the end of 2010, total oil stocks in IEA member countries totalled some 4.2 billion barrels.
- Each IEA member country is required to maintain total oil stock levels equivalent to at least 90 days of net imports, but there is flexibility in meeting this requirement using both crude and refined products. Countries may guarantee this minimum obligation by holding stocks as government emergency reserves, through specialised stockholding agencies, or by placing minimum stockholding obligations on industry.
- Stocks held by agencies or owned directly by member country governments are referred to as public stocks. Public stocks, held exclusively for emergency purposes, accounted for 1.6 billion barrels of the total stocks by end-2010.
- The 2.6 billion barrels of industry stocks include both stocks held to meet government stockholding obligations and stocks held for commercial purposes.
- For more information on IEA member countries' stockholding systems and monthly oil stock levels in days of net imports, see www.iea.org/netimports.asp.

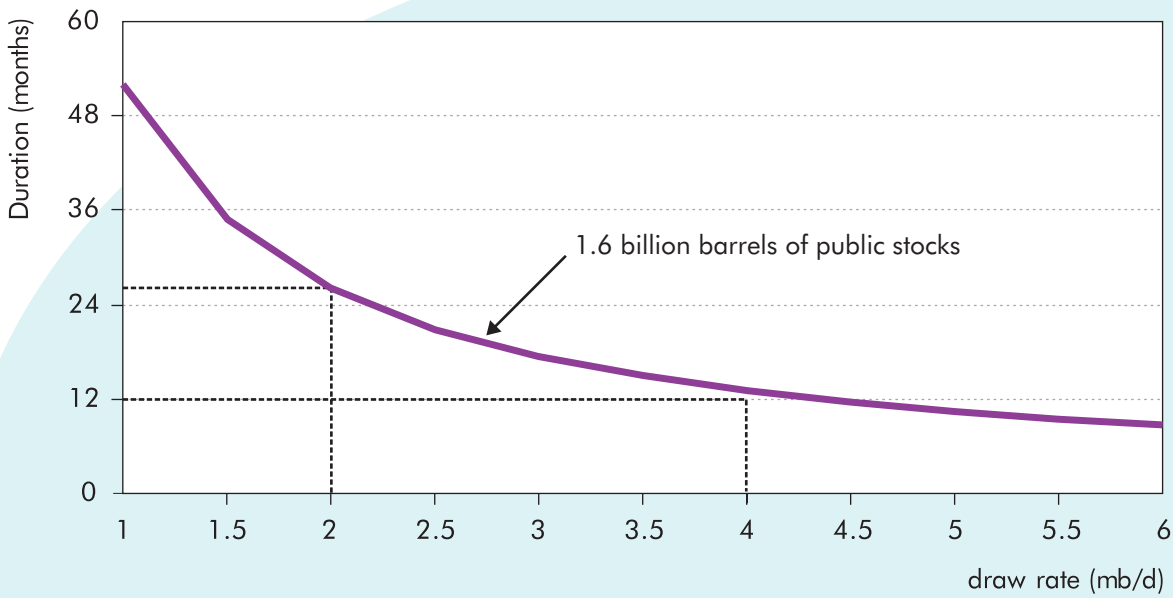
STOCKS IN IEA MEMBER COUNTRIES SINCE 1984



- The use of stocks in an IEA co-ordinated action may involve public stocks, industry stocks, or a combination of both, depending on the stockholding system of the given member country.
- Public stocks may be released through processes such as tenders or loan offers. Industry stocks held to meet minimum stockholding requirements are made available by temporarily reducing stockholding obligations.
- There are some advantages to both stockholding schemes. Stocks held by industry to meet minimum stockholding obligations have the advantage of already being in the supply chain, and therefore very rapidly available to the market in an emergency stock release.
- Public stocks of IEA member countries have been growing, both in terms of volume and as a share of the total stocks in IEA member countries. Today, over 37% of the total IEA stocks are held as public stocks, compared to 24% in 1984. Public stocks provide a very visible response during a supply disruption, putting additional volumes of oil into the supply chain.

POTENTIAL IEA STOCKDRAW CAPACITY OF PUBLIC STOCKS

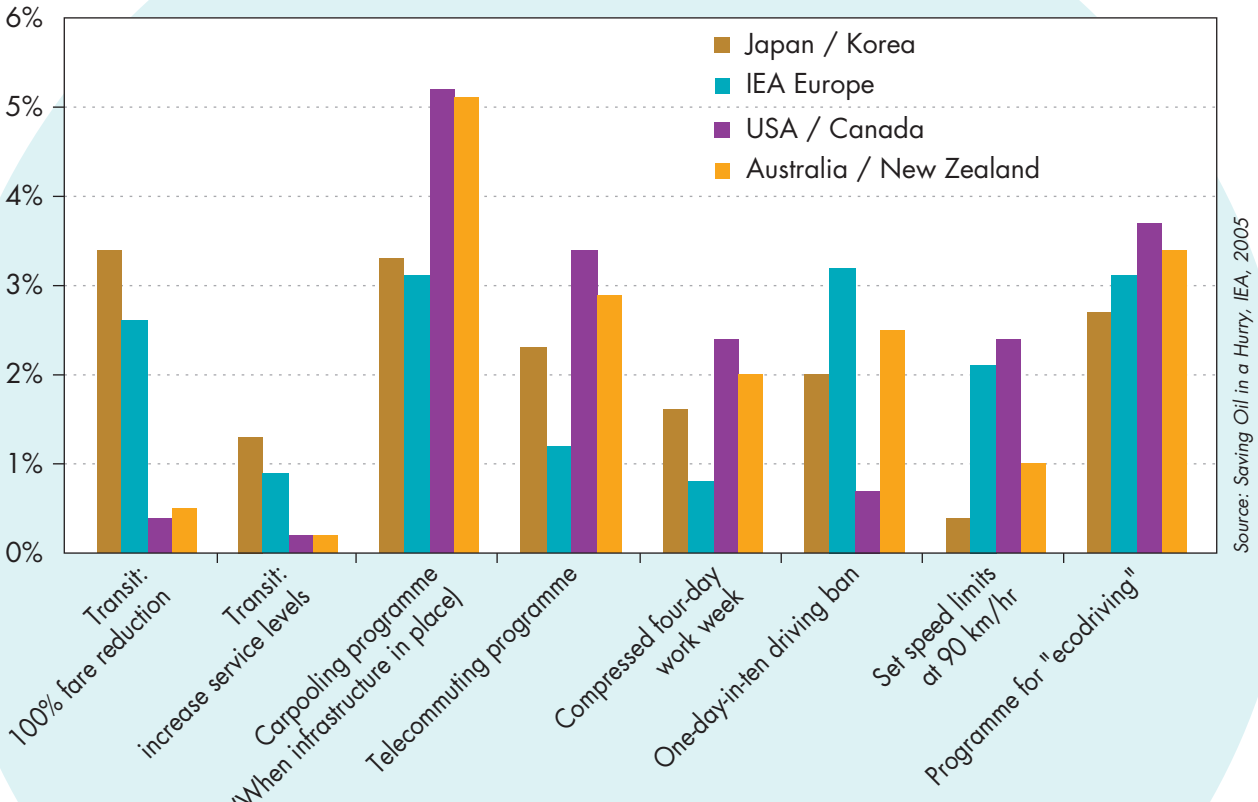
- While both public and industry stocks are available to be drawn upon in an IEA co-ordinated action, the volume of IEA member countries' public stocks alone has the potential to supply significant volumes of oil over extended periods.
- For example, at a drawdown rate of 2 million barrels per day, public stocks alone would cover over 24 months. At a rate of 4 million barrels per day, public stocks would cover one year.
- Thus, the IEA stockdraw potential for both public and compulsory industry stocks is sufficient in magnitude and sustainability to cope with the largest historical supply disruption experienced to date.



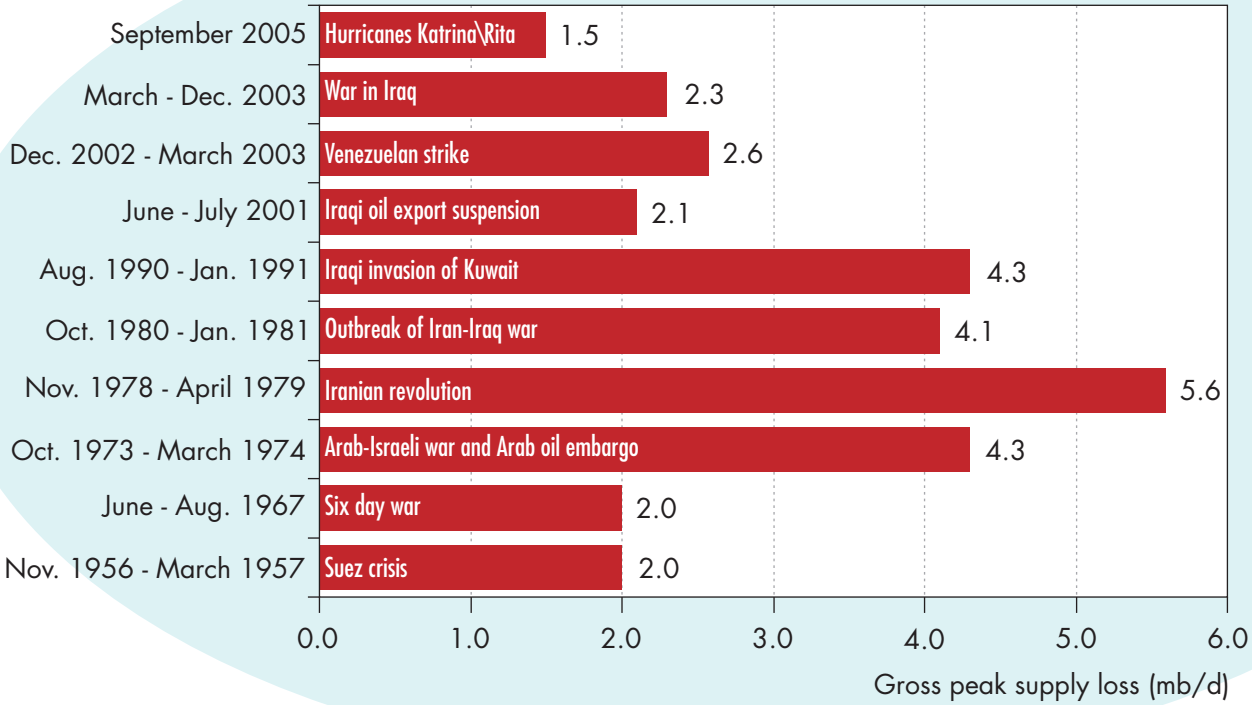
DEMAND RESTRAINT IN AN IEA CO-ORDINATED RESPONSE

- The implementation of demand restraint measures is another tool available to member countries in an IEA co-ordinated action. Demand restraint programmes include temporary measures implemented in a crisis to free up supply by reducing consumption in the short term.
- The transportation sector accounts for roughly 55% of total oil consumption in IEA member countries and offers the most potential for rapid reductions in demand through restraint measures.
- The initial emphasis is often on light-handed, voluntary measures, instigated through public persuasion campaigns. These can be particularly effective in a crisis, when consumers are more receptive to the need of saving oil.
- Compulsory measures can range from medium-handed restrictions such as speed reductions, to more heavy-handed policies such as fuel rationing.

Potential percentage reduction in oil consumption by type of measure in IEA countries

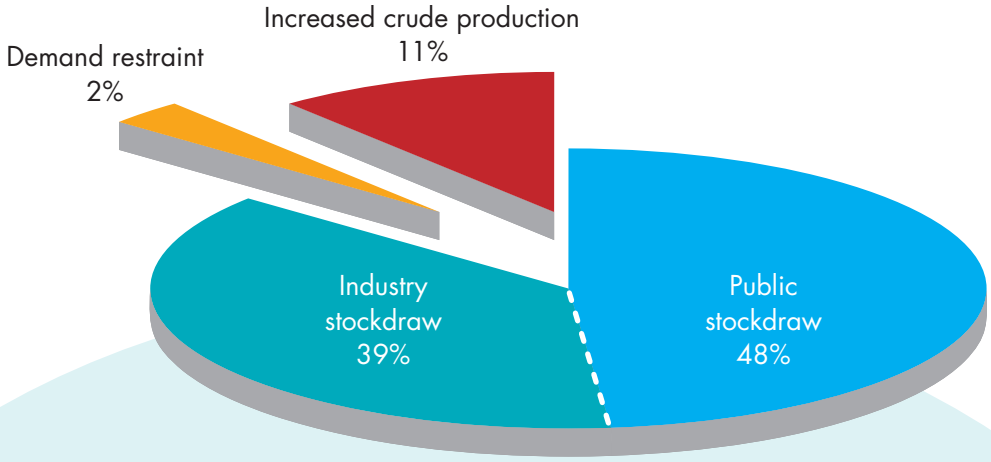


MAJOR WORLD OIL SUPPLY DISRUPTIONS



- The most significant oil supply disruptions in recent decades have occurred in the Middle East, the largest of which was associated with the 1978 Iranian revolution.
- More recently, in early 2003, the market suffered disruptions from overlapping events: the effects of a strike at the national oil company in Venezuela and the outbreak of war in Iraq were exacerbated by strikes in Nigeria.
- In assessing the necessity to initiate a co-ordinated action, the IEA considers multiple factors beyond the gross peak supply loss caused by the event. The decision depends on the expected duration and severity of the oil supply disruption, and also takes into account any additional oil which may be put on the market by producer countries.
- Since its creation, the IEA has acted on two occasions to bring additional oil to the market through co-ordinated actions: in response to the 1991 Gulf War and the hurricanes in the Gulf of Mexico in 2005.

SEPTEMBER 2005
IEA COLLECTIVE ACTION IN RESPONSE TO HURRICANE KATRINA

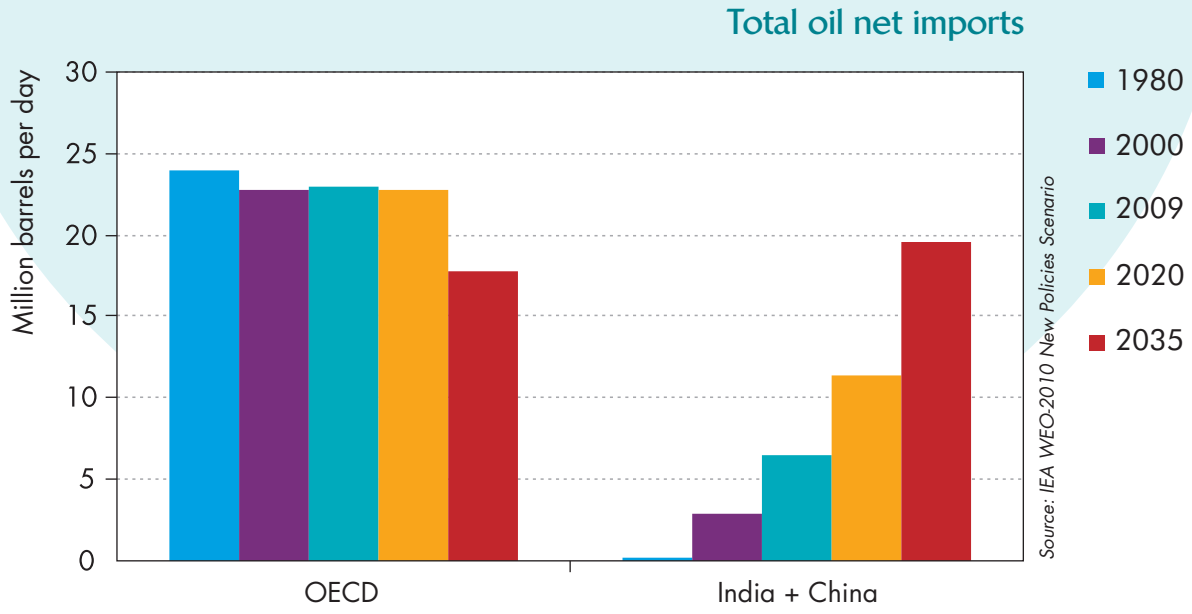


Measures taken by IEA members

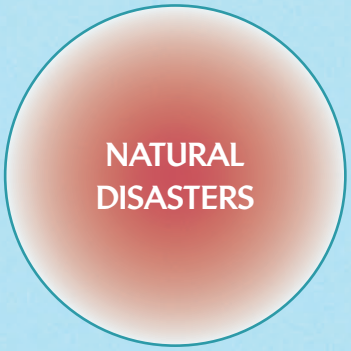
- On 2 September 2005, all 26 IEA member countries agreed to make available to the market the equivalent of 60 million barrels through a combination of emergency response measures, including the use of emergency stocks, increased indigenous production and demand restraint.
- Nearly 29 million barrels were drawn from public stocks. An additional 23 million barrels of oil were made available through the lowering of stockholding obligations on industry.
- Almost half the volume of oil coming from the use of emergency stocks was in the form of refined product.
- The IEA collective action successfully reinforced market functions by providing real barrels to relax tightness and offset interruption in supply.

GLOBAL ENERGY DIALOGUE ON EMERGENCY PREPAREDNESS

- As oil consumption outside IEA member countries is increasing rapidly, the International Energy Agency is promoting dialogue and information sharing on oil security policies and measures with key transition and emerging economies, such as China, India and ASEAN member countries.
- The IEA shares information and experience about creating national strategic oil stocks and intends to co-ordinate future emergency response policies.
- Emergency response simulation exercises for oil supply disruptions (ERE) were organised with participants from China, India, some ASEAN countries and some European countries who are not members of the IEA in 2002, 2004, 2008 and 2010.
- Starting from 2004, the IEA also offered training in statistics and emergency preparedness for a number of non-Member countries, like China, India, ASEAN member countries, Central Asian countries and for APEC Economies.
- In addition, since 2006, high-ranking officials from China, India, Thailand and Indonesia have participated in IEA committees and board meetings.
- The IEA and Thailand held a Joint Emergency Response Exercise in Bangkok in 2009, which was the first exercise held with a specific non-member country. The IEA also conducted an Emergency Response Assessment (ERA) of Thailand in 2010.




CAPACITY CONSTRAINTS
GEO-POLITICAL TENSIONS
TERRORISM



THE CONTINUING NEED FOR EMERGENCY PREPAREDNESS

Global Threats to Energy Security

- Although the oil delivery system has changed dramatically since the oil shocks of the 1970s, there is still a high risk of a supply disruption which could have great economic consequences for IEA member countries.
- Capacity constraints, both in production and refining, have increased the potential of supply falling short of demand. Given this delicate balance of supply and demand, even a disruption of relatively small volume can have a significant impact on the market. Global demand growth exacerbates market tightness, further re-enforcing the need for investment in capacity expansion.
- Uncertain investment climates in some producer countries, often described as an aspect of "resource nationalism", may also hamper the development of future supply streams.
- Geopolitical tensions and terrorism create uncertainty as to the continuous availability of supply. This "risk premium" adds to the volatility of an already tense market, where available oil supplies are increasingly concentrated in fewer countries.
- Natural disasters, such as extreme weather conditions, can disrupt the supply/demand balance, cutting off supply or causing demand to spike.
- …the unexpected event!

THE IEA
STANDS READY

Without continuous monitoring and regular updates, stocks, procedures and other response measures would not be sufficient to deal with a supply disruption. To ensure that they are effective, the IEA uses several instruments:

- **Monitoring the market:** The IEA constantly monitors the oil market. The IEA statistics division collects and provides monthly oil data on supply, demand, balances and stocks for OECD and non-OECD member countries for use by IEA oil market analysts. The major result of this analysis is the monthly Oil Market Report. The analytical capabilities of the IEA enable it to make the necessary assessments of supply disruptions quickly and to provide member countries with advice on response measures to be taken.

- **Emergency Response Reviews:** The IEA Secretariat and IEA member country representatives participate in peer reviews on emergency preparedness of IEA member countries every few years. Procedures and institutional arrangements are checked. A report and recommendations are discussed with all member countries, and key recommendations are made public.

- **Emergency Response Exercises:** Every two years, the IEA carries out a series of workshops and exercises to train and test policies, procedures and personnel. Major consuming non-member countries are invited to participate. The objective is to practice the decision-making process, review policies and procedures, and ensure readiness to act quickly and effectively.

- **IEA emergency stock levels:** Whether IEA countries do in fact have oil reserves up to a minimum of 90 days of net imports is checked and disclosed on the IEA public web site on a monthly basis.

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www.iea.org