

Joint Research Centre (JRC)

Website: Energy Efficiency in Fisheries

<http://energyefficiency-fisheries.jrc.ec.europa.eu/>



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IPSC - Institute for the Protection and Security of the Citizen (<http://ipsc.jrc.ec.europa.eu/>)

Maritime Affairs Unit-FISHREG action (<http://fishreg.jrc.ec.europa.eu>)

Ispra – Italy

Joint Research Centre (JRC)

- the **JRC** is a research-based policy support organisation working for the EU policy-maker. It is a Directorate General of the European Commission.
- The **FISHREG** action (<http://fishreg.jrc.ec.europa.eu>) inside the **Maritime Affairs Unit** of the **IPSC** supports the CFP through:
 - **fisheries management and economics**
 - STECF Scientific Committee
 - implementation of the DCF Regulation
 - co-authoring annual reports for fleet and processing sector
 - **fisheries enforcement and IUU fishing**
 - development of remote sensing techniques
 - genetics
 - trade data analysis
 - habitat mapping
 - electronic reporting
 - **scientific research**
 - collaborative research projects



Fishing is the one of the most energy-intensive food production methods in the world, depending almost completely on fossil fuel. The world's fishing fleets are responsible for circa **1.2%** of total global fuel consumption, corresponding to **0.67** liters of fuel per Kg of live fish and shellfish landed. In 2008, the EU fleet consumed 3.7 billion liters of fuel, representing **25%** of the value of landings.

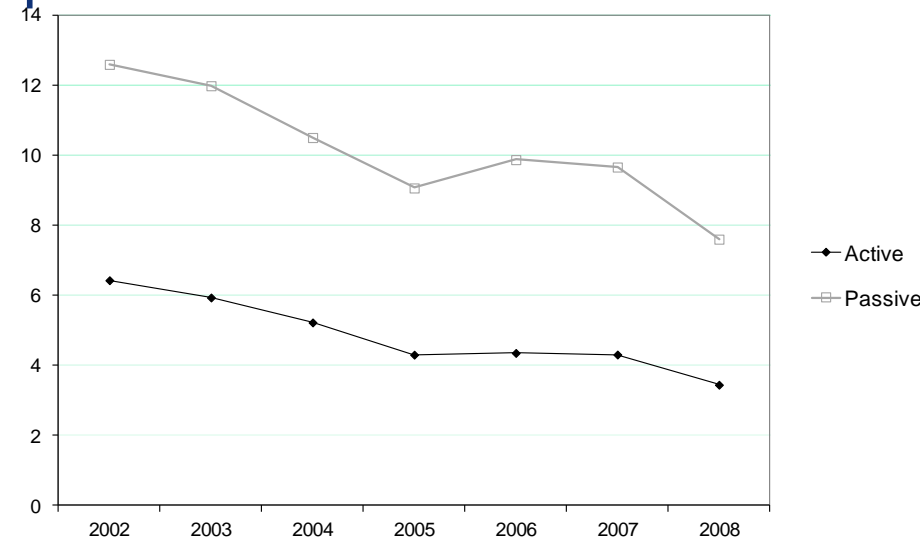
Fuel consumption acts as an indicator of environmental impact: In 2008, the EU fleet burned 3.7 billion liters of fuel, releasing 10,000,000 tons of CO₂, or else **1.81 Kg** CO₂/Kg of fish landed. Represents **0.23%** of global greenhouse gas emissions.



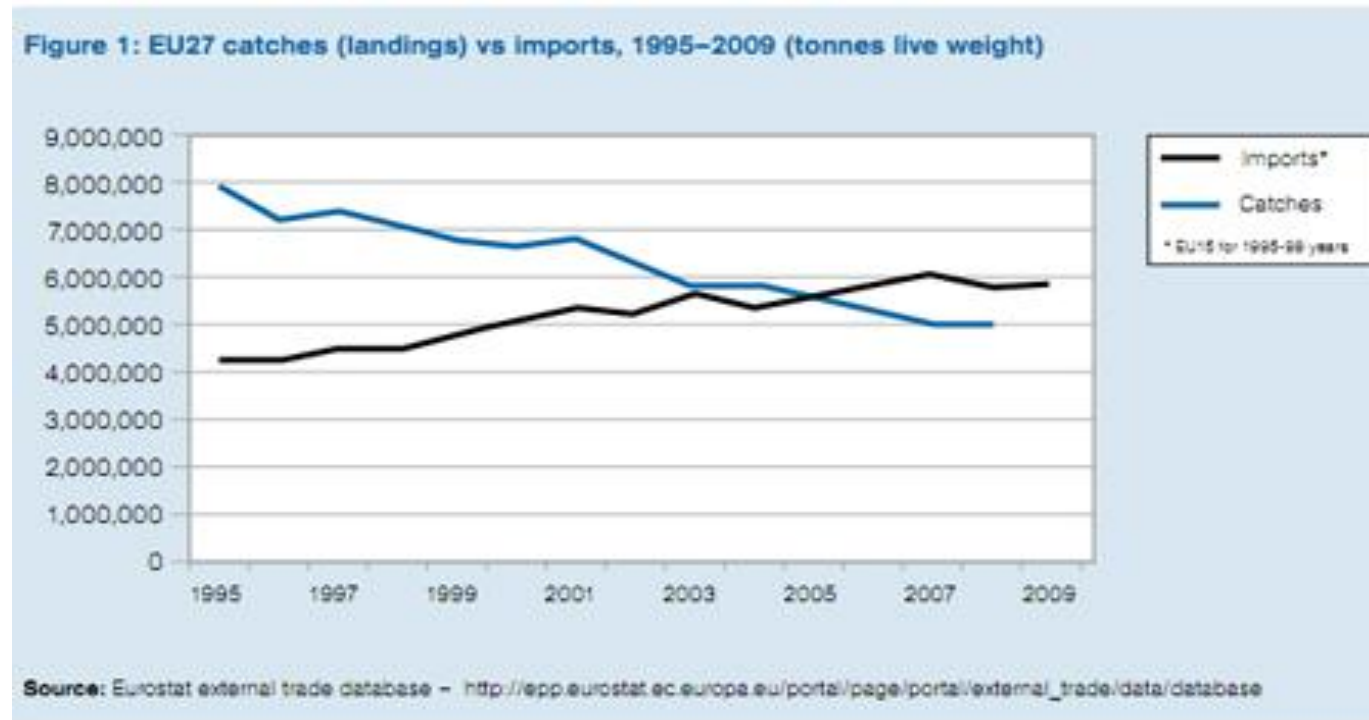
A recent study (2002-2008 - Cheilari et al., *in press*) on a segment of EU fleets, revealed that **fuel prices** increased by **+152%**, average **fish price** increased by **+67%**, and **profitability** decreased a **-33%**

The ratio **landing value/fuel cost** demonstrated a clear decreasing trend. The fuel efficiency of fish capture indicator has been almost halved since the beginning of the study period.

In response to fuel price, **fuel consumption** has decreased by **-10%** and **fishing effort** by **-25%** (days at sea).



EU production in 2002 was **-17%** than in 1995 (Eurostat).



EU fleets suffer from:

- Poor profitability
- Overexploitation of stocks due to overcapacity
- Structural deficiencies

DG MARE Commissioner: **“91%** of Europe’s fish stocks would be endangered within a decade”.

The fisheries sector's concerns about profits peaked after 2005 owing to the steep rise in oil prices. The **reduction of greenhouse gas emissions** and a greater energy efficiency of the fleets are important political objectives of the EU. DG MARE called a **Conference on Energy Efficiency in Fisheries** in May 2006 involving economists, scientists and stakeholders.

DG MARE pledged to set up a system to exchange ideas and best practices. The *Energy Efficiency in Fisheries* website is part of that initiative. Its primary target is fishery professionals.



<https://energyefficiency-fisheries.jrc.ec.europa.eu>



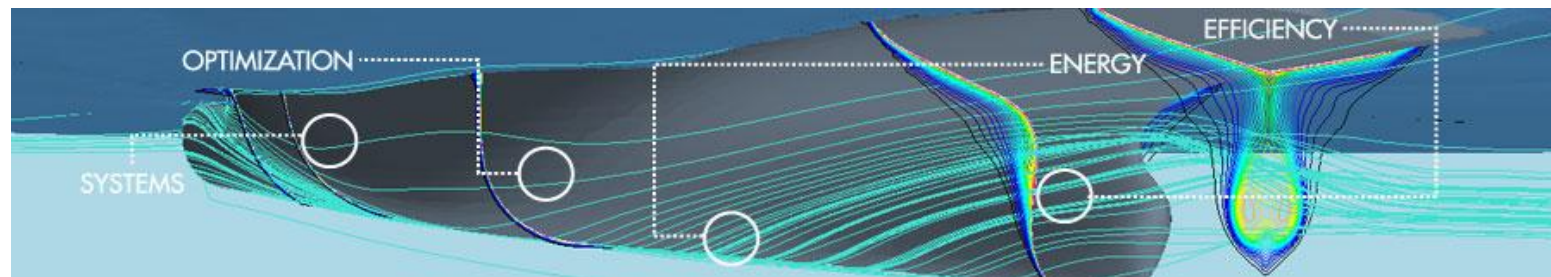
This web site is hosted in JRC and is primarily addressed to **professionals** of the fisheries sector. **CNR-ISMAR (Ancona)** has been actively involved, collecting information to enrich the website contents on topics such as:

- ***Engines, fuels/biofuels), emissions, reduced environmental impacts***
- ***Vessel design & technology***
- ***Vessel operation (maintenance of hulls and engines)***
- ***Use of alternative/renewable energy sources (wind, H₂ fuel cells etc.)***
- ***Efficient fishing gears (e.g. reduced gear drag), selectivity***
- ***Fishing tactics and techniques***
- ***Fuel management systems, energy monitoring and control systems, energy audits, other energy uses onboard (e.g. auxiliary engines)***
- ***Other innovations and techniques***



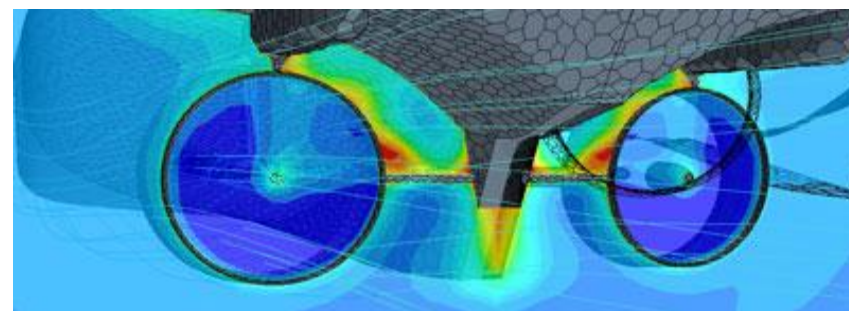
The **amount of energy** used by a fishing vessel depends on:

- Size,
- Time of year,
- Weather,
- Fishing gear
- Location
- Skill and knowledge



The major causes of **fuel inefficiency**:

- **people** - principally the vessel operator
- **propellers** - incorrect diameter or pitch
- **engines** - mismatched to gearbox or propeller; engine unsuitability



Fouling: increase in fuel consumption of up to 7% after only one month, and 44% after six months

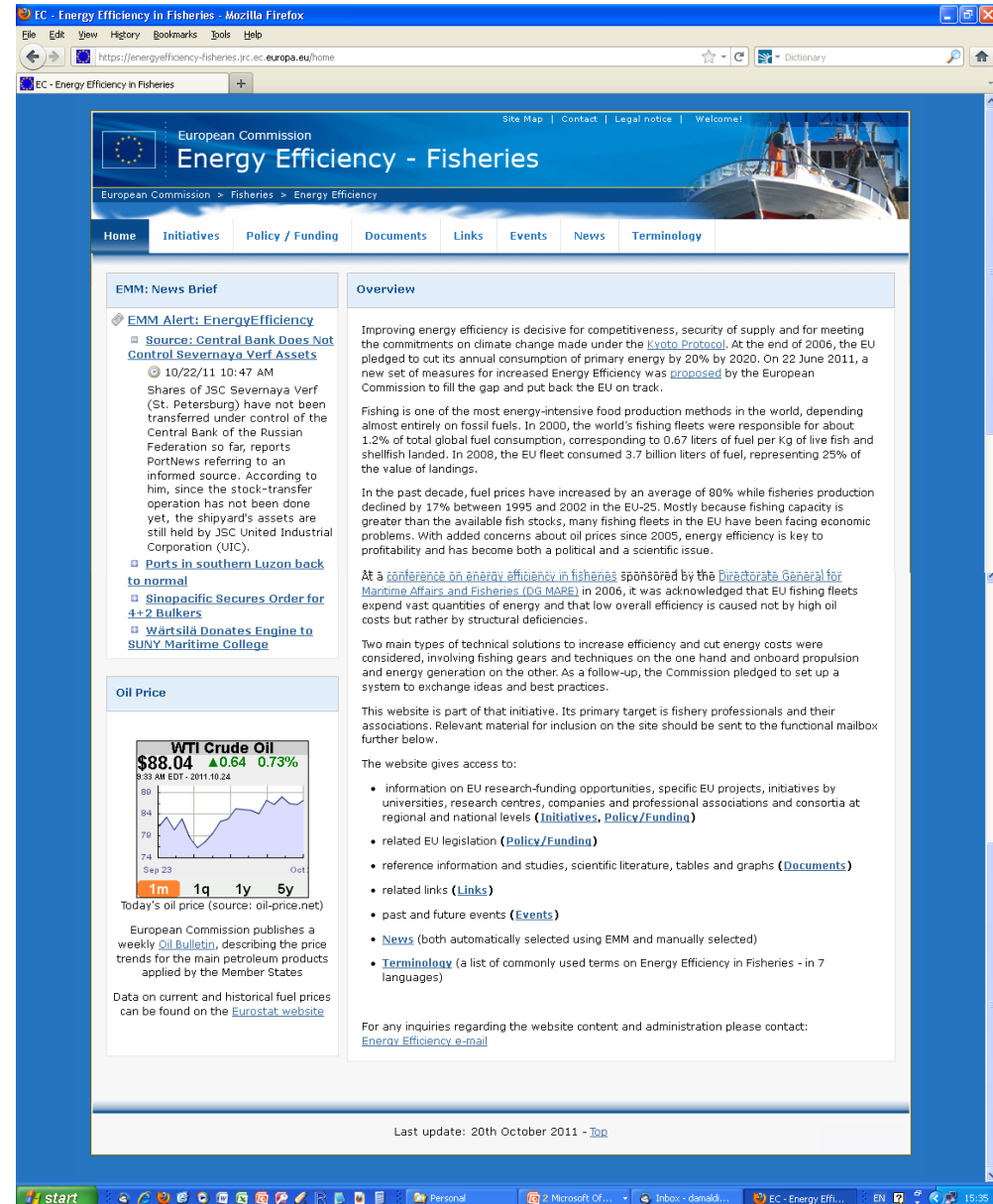
Ageing: after 10 years a steel vessel requires ~10 % more power to maintain the same service speed as when it was launched

Navigation: Navigational aids (satellite navigators and echo sounders) can contribute to fuel savings of up to 10%

Split 28 October 2011 – DEMaT '11

What's on this site:

- *Initiatives*
- *Policy/Funding*
- *Documents*
- *Links*
- *Events*
- *News*
- *Terminology*



The screenshot shows the website interface with the following elements:

- Browser:** Mozilla Firefox, address bar: <https://energyefficiency-fisheries.jrc.ec.europa.eu/home>
- Page Header:** European Commission logo, "Energy Efficiency - Fisheries", navigation links (Site Map, Contact, Legal notice, Welcome!)
- Navigation Menu:** Home, Initiatives, Policy / Funding, Documents, Links, Events, News, Terminology
- EMM: News Brief:**
 - EMM Alert: EnergyEfficiency**
 - Source: [Central Bank Does Not Control Severnaya Verf Assets](#)
 - 10/22/11 10:47 AM
 - Shares of JSC Severnaya Verf (St. Petersburg) have not been transferred under control of the Central Bank of the Russian Federation so far, reports PortNews referring to an informed source. According to him, since the stock-transfer operation has not been done yet, the shipyard's assets are still held by JSC United Industrial Corporation (UIC).
 - [Ports in southern Luzon back to normal](#)
 - [Sinopacific Secures Order for 4+2 Bulkers](#)
 - [Wärtsilä Donates Engine to SUNY Maritime College](#)
- Oil Price:**
 - WTI Crude Oil**
 - \$88.04 ▲0.64 0.73%
 - 9:33 AM EDT - 2011.10.24
 - Line graph showing price trends from Sep 23 to Oct.
 - Buttons for 1m, 1q, 1y, 5y views.
 - Today's oil price (source: oil-price.net)
 - European Commission publishes a weekly [Oil Bulletin](#), describing the price trends for the main petroleum products applied by the Member States
 - Data on current and historical fuel prices can be found on the [Eurostat website](#)
- Overview:**
 - Improving energy efficiency is decisive for competitiveness, security of supply and for meeting the commitments on climate change made under the [Kyoto Protocol](#). At the end of 2006, the EU pledged to cut its annual consumption of primary energy by 20% by 2020. On 22 June 2011, a new set of measures for increased Energy Efficiency was [proposed](#) by the European Commission to fill the gap and put back the EU on track.
 - Fishing is one of the most energy-intensive food production methods in the world, depending almost entirely on fossil fuels. In 2000, the world's fishing fleets were responsible for about 1.2% of total global fuel consumption, corresponding to 0.67 liters of fuel per Kg of live fish and shellfish landed. In 2008, the EU fleet consumed 3.7 billion liters of fuel, representing 25% of the value of landings.
 - In the past decade, fuel prices have increased by an average of 80% while fisheries production declined by 17% between 1995 and 2002 in the EU-25. Mostly because fishing capacity is greater than the available fish stocks, many fishing fleets in the EU have been facing economic problems. With added concerns about oil prices since 2005, energy efficiency is key to profitability and has become both a political and a scientific issue.
 - [At a conference on energy efficiency in fisheries sponsored by the Directorate General for Maritime Affairs and Fisheries \(DG MARE\)](#) in 2006, it was acknowledged that EU fishing fleets expend vast quantities of energy and that low overall efficiency is caused not by high oil costs but rather by structural deficiencies.
 - Two main types of technical solutions to increase efficiency and cut energy costs were considered, involving fishing gears and techniques on the one hand and onboard propulsion and energy generation on the other. As a follow-up, the Commission pledged to set up a system to exchange ideas and best practices.
 - This website is part of that initiative. Its primary target is fishery professionals and their associations. Relevant material for inclusion on the site should be sent to the functional mailbox further below.
 - The website gives access to:
 - information on EU research-funding opportunities, specific EU projects, initiatives by universities, research centres, companies and professional associations and consortia at regional and national levels ([Initiatives](#), [Policy/Funding](#))
 - related EU legislation ([Policy/Funding](#))
 - reference information and studies, scientific literature, tables and graphs ([Documents](#))
 - related links ([Links](#))
 - past and future events ([Events](#))
 - [News](#) (both automatically selected using EMM and manually selected)
 - [Terminology](#) (a list of commonly used terms on Energy Efficiency in Fisheries - in 7 languages)
 - For any inquiries regarding the website content and administration please contact: [Energy Efficiency e-mail](#)
- Footer:** Last update: 20th October 2011 - [Top](#)

Split 28 October 2011 – DEMaT '11

Initiatives

Research: European Commission websites

Specific projects : WINTECC, ECOPESCA GEIE,
CLEANHULL, ENERFISH

National Research Projects (e.g.: Pôle de Compétitivité Mer
Bretagne)

EU Research Projects : EU funded past/on-going
projects (CORDIS, FP6-7)

Training & Workshops



Backgrounder **Fishing Vessel Energy Efficiency Workshops**

Background

Fish harvesters know only too well that soaring fuel prices are reducing the profitability of their traditional fishing enterprises; many believe the increased expenses are threatening the economic stability of the entire sector. The prospect of sustained high fuel prices has provoked widespread interest in finding energy efficiency strategies to mitigate the overall impact to industry.

Policy/Funding

EU Policies: Energy, Environment

Legislation: EUROPA Activities: summaries of legislation, EUR-Lex Database:
EU fisheries legislation in force



European Fisheries Fund: Financial instrument of the CFP. Aid for cessation, Investments, small-scale coastal fishing, socio-economic compensation, young fishermen

Operational Programmes Each MS sets up an operational programme for 2007 – 2013, setting priorities under the EFF

State Aid: Government subsidies to the fisheries and aquaculture sector

De minimis regulation; Block exemption regulation

Emergency Measures: exceptional /temporary support to the fisheries sector

Other Funding: Eurostars Program (innovation-performing SME's)



Links to grants: UK & Scotland



The Scottish Government
Riaghaltas na h-Alba

Documents

Reference material: Scientific papers, Technical reports, Tables & Graphs

Links

EU Links: JRC, European Parliament, EC, DG MARE, Councils of EU, EEA

International Associations/Organizations: FAO, OECD, NAFO, IEA...

National Associations: Fishermen associations

RACs: Regional Advisory Councils

Universities / Research centers

Regional Maritime Clusters : local lobbying centers to influence decision makers

Networks/Fora: Energy use in Fisheries sector, EFTP

Facilities/Research Infrastructure: description of existing facilities, namely research vessels and flume tanks



Events

Conferences/Symposia

Exhibitions/Fairs



e-fishing
FISHING VESSEL ENERGY EFFICIENCY



News


Press Releases: EC-Fisheries, RAPID on Energy, Maritime Affairs & Fisheries, European Parliament News, EU Council (Fisheries, Energy, Environment)

European Media Monitor (EMM): alerts based on pre-defined keywords

NewsBrief: JRC public web application with relevant topics discussed in 43 languages.

Terminology

Useful terms in 7 languages



Site Map | Contact | Legal notice | Welcome!

European Commission
Energy Efficiency - Fisheries

European Commission > Fisheries > Energy Efficiency

Home | Initiatives | Policy / Funding | Documents | Links | Events | News | **Terminology**

Useful terms in 7 languages

English	French	Spanish	Italian	German	Dutch	Norwegian
Active Fishing Gear	Chalutage À Deux Bateaux	Pesca En Pareja	Attrezzo Da Pesca Attivo	Aktive Fischerei-Ausrüstung	Aktive Fanggeräte	Aktivt Fiskeredskap
Alternative Fuel	Carburant De Remplacement	Combustible Alternativo	Combustibile Alternativo	Alternativer Treibstoff	Alternatieve Brandstof	Alternativt Drivstoff
Commercial Fishing	Pêche Commerciale	Pesca Comercial	Pesca Commerciale	Kommerzieller Fischfang	Commerciële Visserij	Kommersielt Fiske
Dragged Fishing Gear	Engins De Pêche Traîné	Artes De Pesca Arrastrados	Attrezzo Da Pesca Da Traino	Geschleppte Fischerei-Ausrüstung	Schleppte Fanggeräte	Sleperedskap
Eco Friendly Fishing	pêche Écologique	Pesca Ecologica	Pesca Ecologica	Ökologischer Fischfang	Ecovriendelijk Vissen, Milieuvriendelijk Vissen	Økovenlig Fiske
Energy Audit	Audit Énergétique	Auditoría Energética	Audit Energetico	Energie-Audit	Energie Audit	Energirevisjon
Energy	Consommation	Consumo De	Consumo	Energieverbruik	Energieverbruik	Energiforbruk

How you can help

Please disseminate this information and if you wish to suggest items for inclusion in the website, please send your contribution to the contact address given at the bottom of the websites Home page:
energyefficiency-fisheries@jrc.ec.europa.eu

Alternatively you can also contact our partners in CNR-ISMAR at Ancona, ITALY:

Dr Antonello Sala: **a.sala@ismar.cnr.it**

Dr Emilio Notti: **e.notti@an.ismar.cnr.it**

Note: **THIS IS NOT A SITE FOR ADVERTISING...**