EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

Wind Energy - The Facts: Project funding and website

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IEE PROGRAMME

WIND ENERGY - THE FACTS PUBLICATION

WEBSITE

INTELLIGENT ENERGY EUROPE (IEE) PROGRAMME

- **Wind Energy –The Facts**: IEE financed project of 2 years (01/11/07 - 31/10/09) that delivered the publication

- **IEE**: EU's **funding tool** to encourage the use of **renewable energy sources and energy saving**

- **Operational objectives:** improve sustainability, boost investment, remove non-technological barriers

Intelligent Energy Europe

FUNDING AREAS 2009

WINDENERGY THEFACTS

Energy efficiency

- Buildings
- Energy-efficient products

Renewable energy sources

- Electricity
- Heating + cooling
- Biofuels
- Small-scale in buildings

Mobility

- Alternative fuels and clean vehicles
- Energy-efficient transport
- Capacity building in agencies

Source: European Info Day, Intelligent Energy –Europe, EACI

Intelligent Energy Europe

WINDENERGY THEFACTS

INTELLIGENT ENERGY EUROPE (IEE) PROGRAMME in figures

- Budget:
  2007-13: €730 million
- Maximum funding rate: 75%
- Projects supported to date:
  400+ projects
- Number of beneficiaries:
  > 3,000

Source: European Info Day, Intelligent Energy –Europe, EACI

IEE: CONVERT POLICY INTO ACTION

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EU energy efficiency and renewables objectives

Intelligent Energy Europe

- Creating and spreading effective methods and best practice
- Training and education
- Know-how transfer
- Market intelligence
- Inform policy development and implementation

Real changes on the ground

€ 730 million from 2007-13

Intelligent Energy Europe

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IEE: PROMOTION AND DISSEMINATION PROJECTS

- help deliver the key EU climate change and energy objectives
- match the priorities of the IEE Work Programme
- involve at least 3 partners from different countries
- take 2-3 years to deliver
- are NOT "hardware "type investments or research & development projects.

Source: European Info Day, Intelligent Energy –Europe, EACI

Intelligent Energy Europe

WINDENERGY THEFACTS

EACI/IEE

More information available at:

http://ec.europa.eu/energy/intelligent/contact/index_en.htm

executive agency eaci

EUROPEAN COMMISSION

for competitiveness & innovation

WINDENERGY THEFACTS

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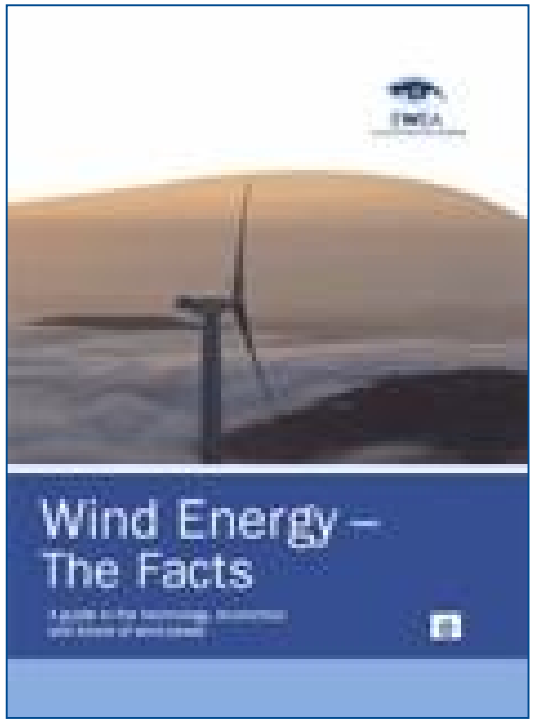
WINDENERGY THEFACTS

WIND ENERGY –THE FACTS PUBLICATION

- The most important wind energy reference in the world
- Detailed overview of the wind energy sector
- Prepared by a consortium of leading experts from different sectors all over Europe
- 2nd year: dissemination workshops



WIND ENERGY –THE FACTS VOLUMES

I. Technology

II. Grid Integration

III. The Economics of Wind Power

IV. Industry and Markets

V. Environment

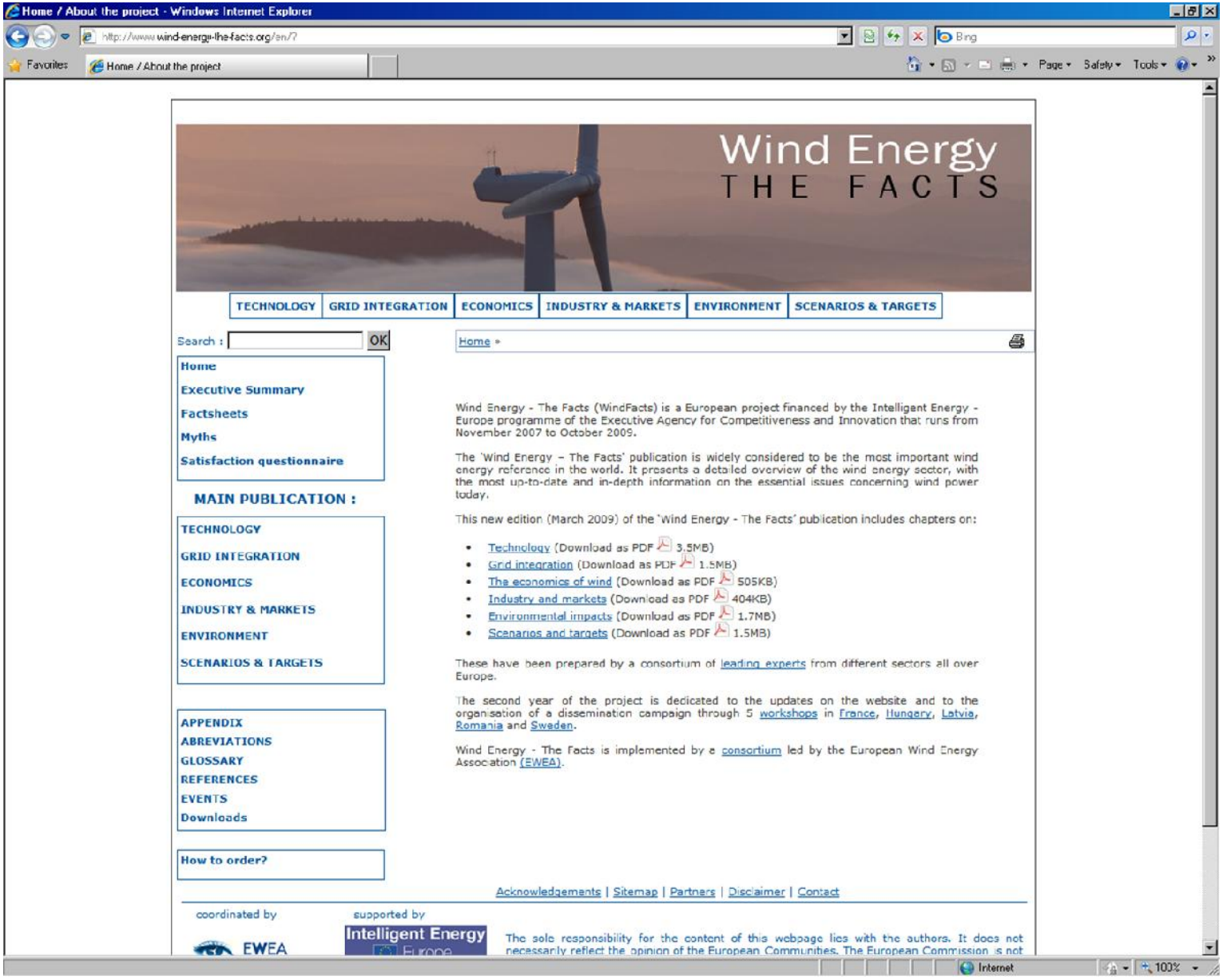
VI. Scenarios and Targets

WINDENERGY THEFACTS

CONTENTS

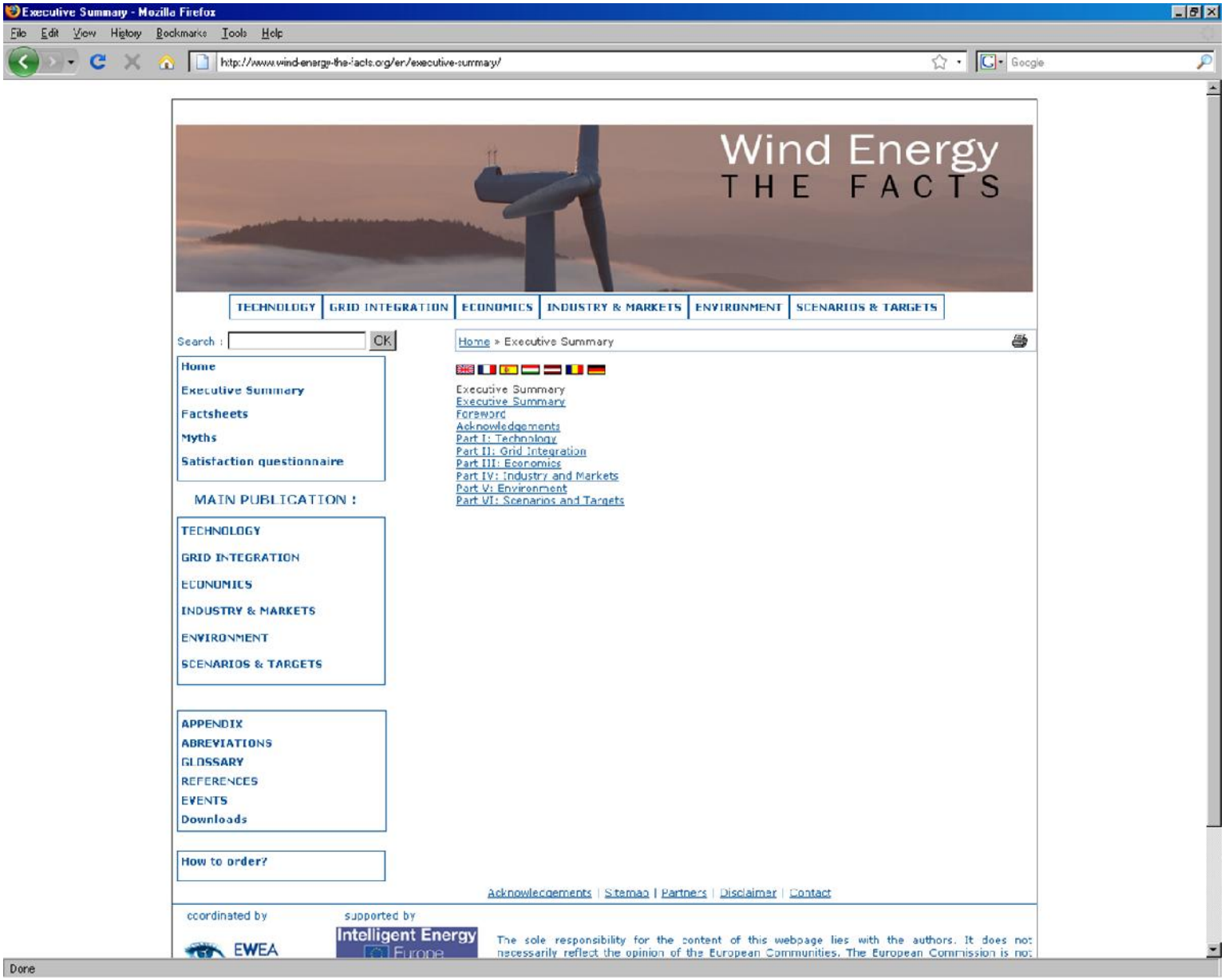
WEBSITE: WWW.WINDFACTS.EU

WINDENERGY THEFACTS



SUMMARIES

WINDENERGY THEFACTS



ON SCREEN

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Alternative drive train configurations - Windows Internet Explorer

http://www.wind-energy-the-facts.org/en/part-i-technology/chapter-3-wind-turbine-technology/current-developments/alternative-drive-train-configurations.html

Favorites | Alternative drive train configurations

Source: Clipper

Clipper Wind (Figure 3.33) manufactures 2.5 MW wind turbines, with a hybrid drive train of very distinctive design. After initial research into systems with multiple induction generators, Clipper developed a system with an innovative gearbox with outputs to four PMGs. As with other hybrids, this again leads to a very compact drive train.

Figure 3.34: 5 MW Multibrid Wind Turbine

Source: Multibrid

Prokon Nord Energiesysteme GmbH, based in Leer, acquired the previous Multibrid company in 2003. The prototype M5000 (Figure 3.34) was installed in Bremerhaven, and commissioned in 2005. The Multibrid technology was subsequently acquired by Areva in June 2008.

Distinctive features of the M5000 include a highly compact integrated slow rotating drive system, comprising a single main bearing (no main shaft), a single-stage gearbox and a medium speed PMG (58 -147rpm). With a tower head mass of 310 tonnes, the M5000 is apparently the lightest wind turbine rated around 5 MW.

OTHER DRIVE TRAIN DEVELOPMENTS

Hydraulic components have figured in drive train design for some time in motors, brakes, fluid couplings or torque limiting systems. Hydraulic drives comprising pump(s) and motor(s) for main power transmission were employed in the unsuccessful Bendix 3 MW prototype of the

Done | Internet | 100%

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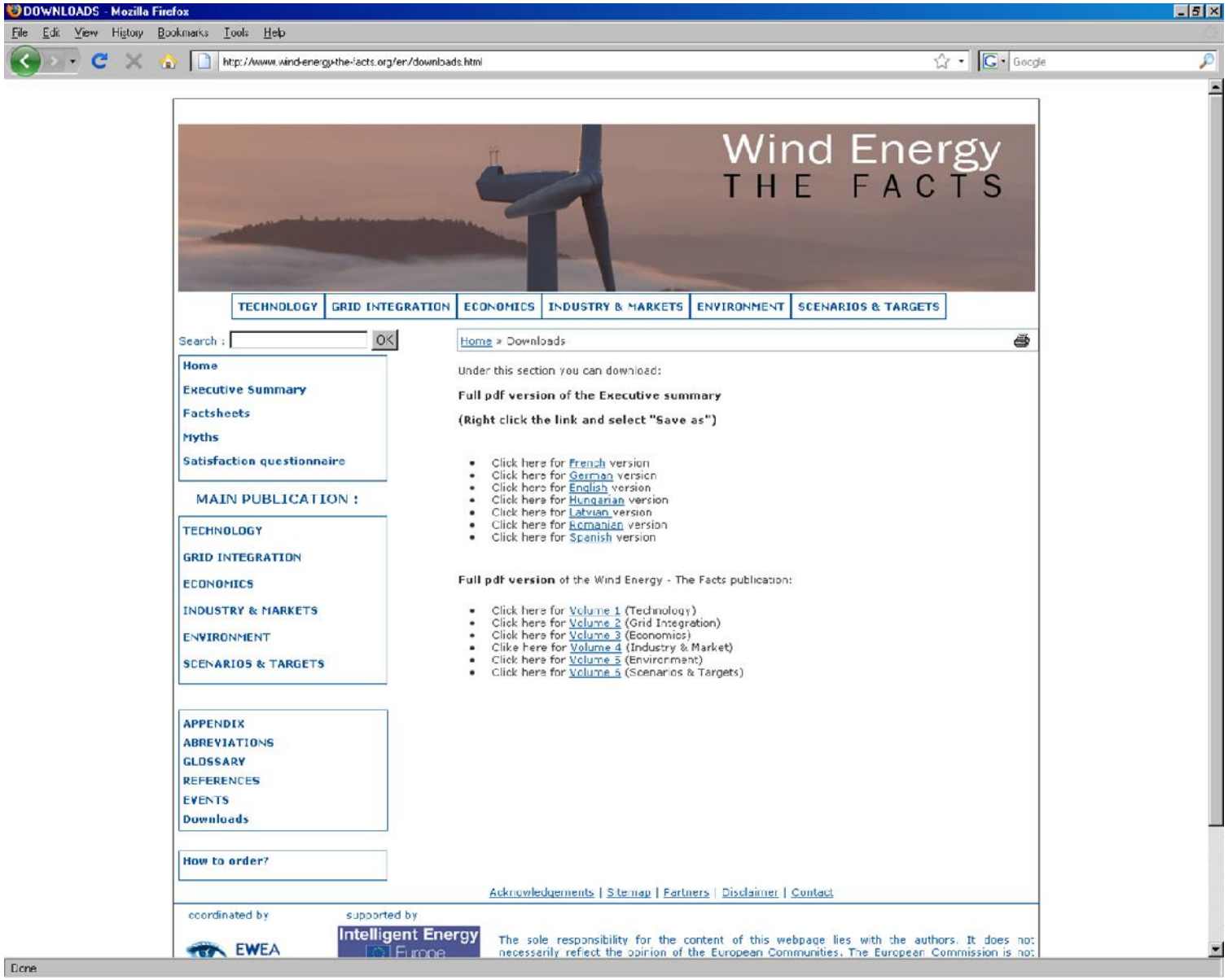

EXAMPLE VOLUME

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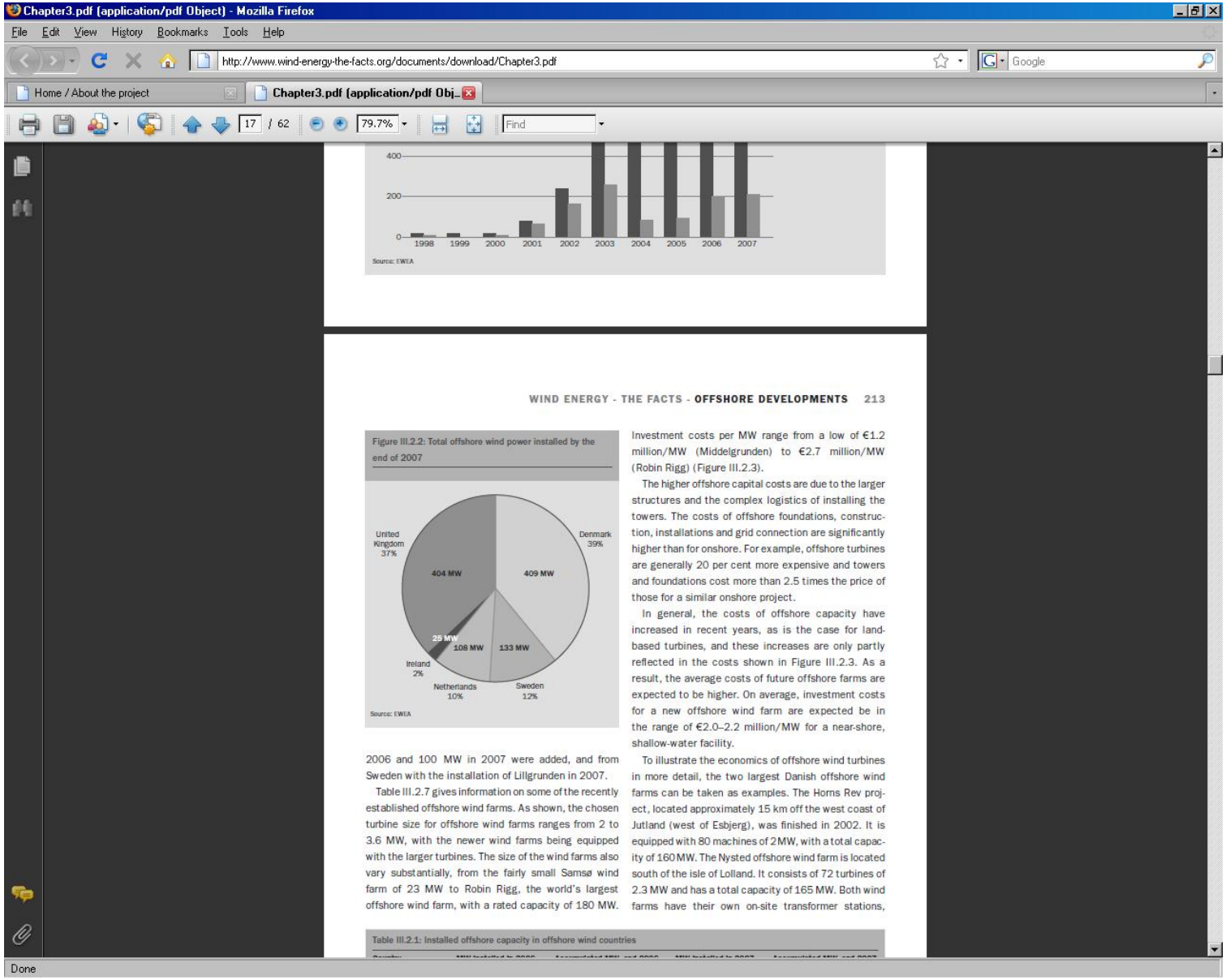

EXAMPLE SUMMARY

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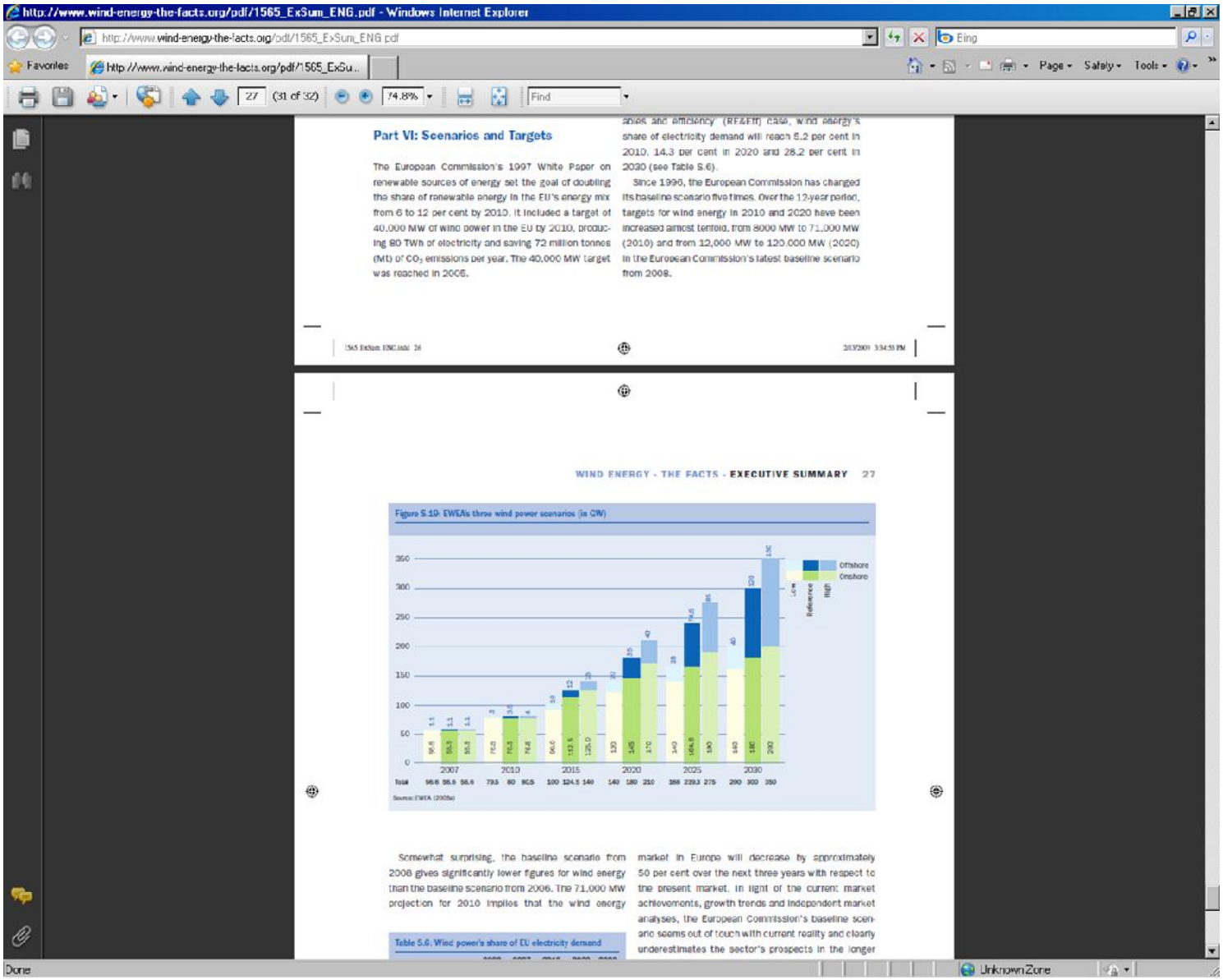
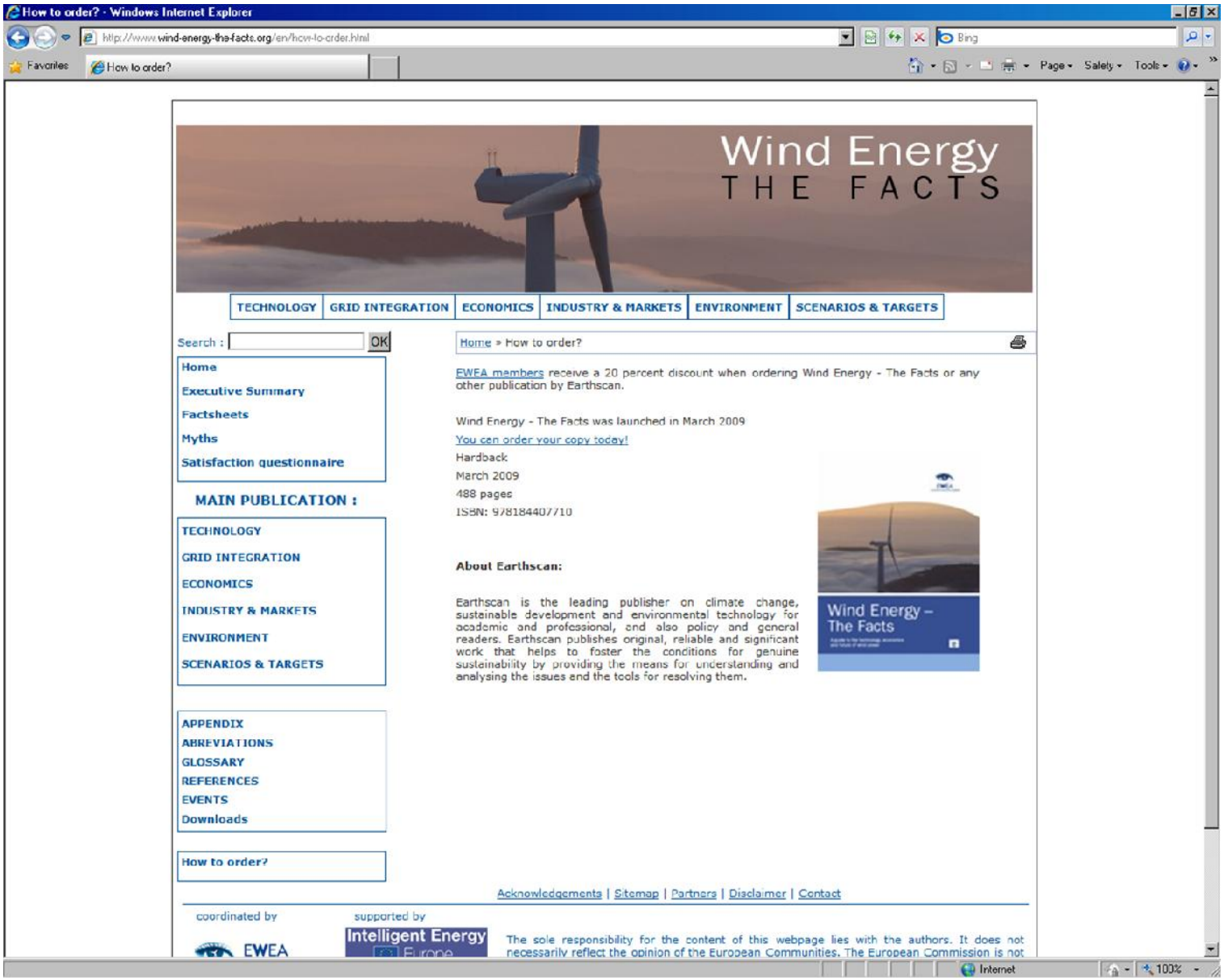


HOW TO ORDER THE BOOK?

WINDENERGY THEFACTS



CONCLUSION

WINDENERGY THEFACTS

Order Wind Energy –The Facts online, consult page by page, or download all volumes in pdf format:

- www.windfacts.eu

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