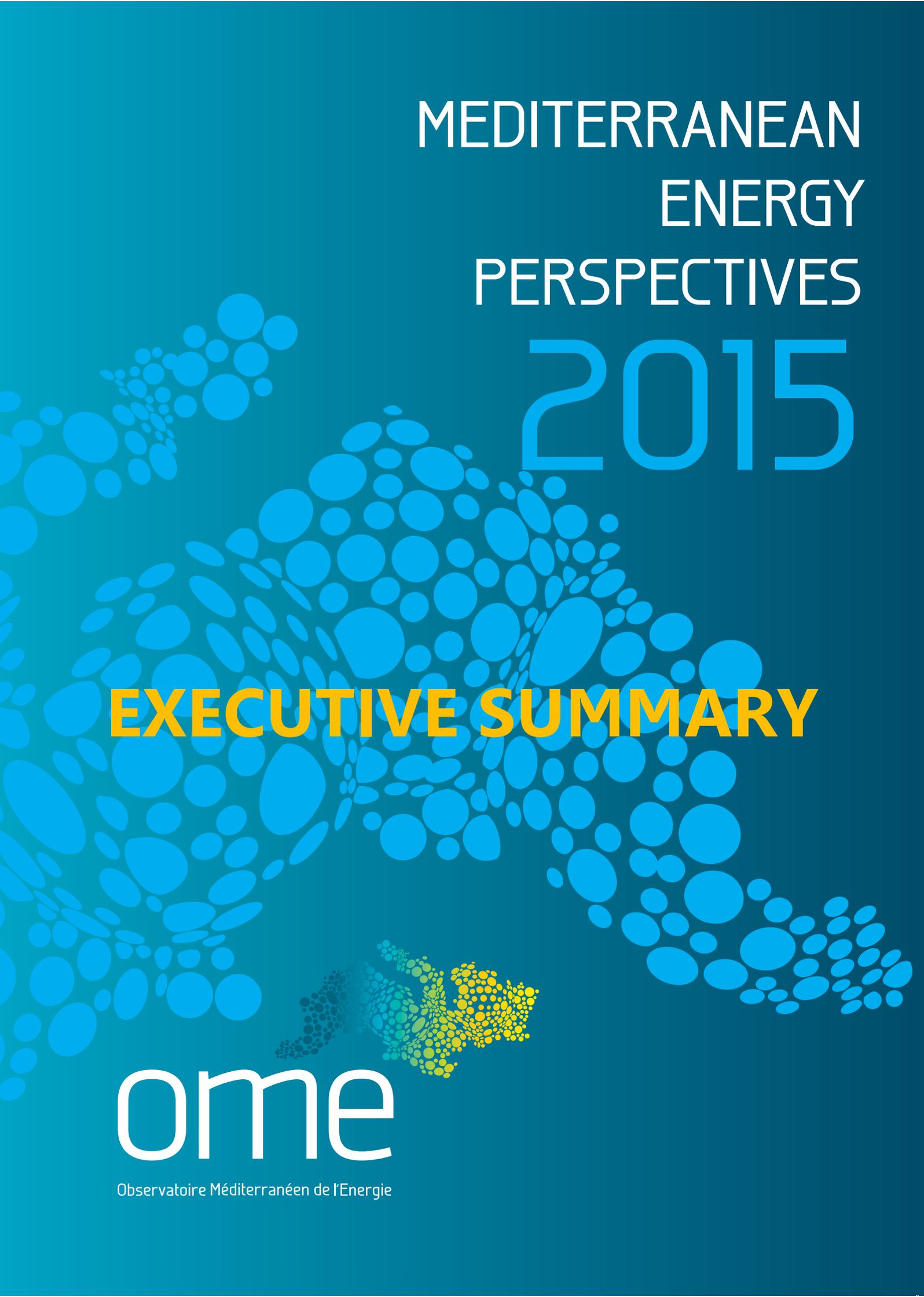


MEDITERRANEAN
ENERGY
PERSPECTIVES

2015

EXECUTIVE SUMMARY



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EXECUTIVE SUMMARY

The Mediterranean is the basin of ancient civilizations that shaped our modern world. Today it depicts a rich mosaic of diverse peoples, languages, religions, cultures and natural resource endowments. Mediterranean countries account for 7% of world population and consume about 8% of the world's primary energy. Its geographic situation makes of the Mediterranean, which is a crossroads where three continents meet, an important transit corridor for global energy markets.

Climate change is affecting adversely the region, and in recent years, upheavals and social unrests have worsened the situation. We are running out of time to rekindle sustainability especially on the energy front. Measures to ensure a clean, affordable and safe energy future are needed now. What does the energy future have in store for the 25 Mediterranean countries?

FOUNDATIONS OF THE OUTLOOK TO 2040

Mediterranean Energy Perspectives 2015 (MEP 2015) provides analysis, detailed data and presents different energy paths up to 2040. It takes an in-depth look at the energy supply and demand balance for the major components of the energy sector. This is the third edition of Mediterranean Energy Perspectives: it builds on the analysis from the 2008 and 2011 editions. This study draws upon the extensive expertise of Observatoire Méditerranéen de l'Énergie (OME) and its members.

The outlook to 2040 presents two possible energy scenarios into the future based on different assumptions. Both scenarios consider that energy demand will be met. Both are built from the same assumptions for population, economic growth, and international fossil-fuel prices. They are based on OME's Mediterranean Energy Model:

- The Conservative Scenario takes into account past trends, current policies and ongoing projects, but adopts a cautious approach regarding the implementation of new policy measures and planned projects. It does not assume large-scale efficiency programmes or major efforts for energy conservation.
- The Proactive Scenario is based on the announced and foreseen government plans for the implementation of strong energy efficiency programmes and increased diversification in the energy supply mix. This includes more renewable energy sources in particular for South Mediterranean countries. It assumes a decline in oil and coal input to electricity generation and favours clean energy fuels and technologies.

This study was conducted in 2015 amidst the socio-political unrests taking place in a number of the countries in the region and in the preparation of the 21st Conference of the Parties - COP 21. These events are entailing important political changes for the countries and the region as a whole. The energy outlooks presented here takes into account these changes and their possible implications to the best of OME's abilities. While short to mid-term dynamics in the energy sector may be uncertain, we believe that they will not have a radical impact on the long-term trends presented in this study.

HITTING THE ENERGY BRICK WALL

The Mediterranean countries have in common the goal to fuel their economies and citizens in a cost effective and sustainable manner. A sustainable energy system in the region can be developed for the benefit of all.

Indeed, there is really no alternative than changing our energy course. Keeping-up with the current trends, portrayed in the Conservative Scenario, with mild efforts towards more energy efficiency and more renewables in the energy mix will lead to serious consequences for the region, especially for South Mediterranean countries. Over the next 25 years, the situation would evolve critically on all counts: uncontrolled and unsustainable energy and electricity demand growths (+50% and +77% respectively), soaring infrastructure and import bills (+440 GW to be installed and doubling of the fossil-fuel imports) and consequently, a critical rise in carbon emissions (+45%) putting further strain on the environment. In fact, critical consequences of unsustainable energy demand are already affecting the region. There is a need to breakout of this unsustainable energy doom urgently.

ENERGY DEMAND: A TALE OF TWO SHORES

Today the North Mediterranean accounts for two-thirds of primary energy demand, which increased for the whole region by 1.4% per year on average, from 1990 to 2013. In the outlook to 2040, energy demand in the Mediterranean countries increases by less than 1.5% per year on average but growth would be much stronger in the South Mediterranean where energy demand would more than double.

Expected trajectories for energy demand in the region are contrasted across the two shores of the Mediterranean. The North countries, indeed, have already embarked upon a transition path with substantial levels of renewables and effective demand-side management. Energy demand in the North has indeed decreased by 4% since 2010. However, this decrease is not totally linked to its energy efficiency efforts but has also to be put into perspective with its very moderate population growth (+0.5%) and decreasing gross domestic product (-2%). As a result, in the Proactive Scenario, by 2040, energy demand in the North Mediterranean would continue to decrease. In 2040, North Mediterranean energy demand would be 9% lower than 2013 levels, standing at 574 Mtoe, down from 634 Mtoe in 2013.

The South Mediterranean, on the other hand, has experienced sustained economic and population growths over the past years (+6% and +5% respectively), translating in an energy demand growth of +6% since 2010. South Mediterranean Energy demand reached 356 Mtoe in 2013 up from 335 Mtoe in 2010. In the Proactive Scenario, energy demand would continue to increase to reach 633 Mtoe in 2040 – a 78% increase from 2013 levels, way below the more than doubling demand expected if current trends endure. By the end of the outlook period, the South Mediterranean energy demand would thus have exceeded that of the North.

A FOSSIL FUEL FUTURE DOOM

Regardless of the scenario, fossil fuels remain the cornerstone of energy demand over the outlook period. However, efficiency measures and a shift towards renewables would lower fossil fuels share in the energy mix to 67% in the Proactive Scenario in 2040- an all-time low for the region, as compared to 76% in the Conservative Scenario.

In 2040, in the Conservative Scenario, oil accounts for 31% of the region's primary energy demand, natural gas increases to 36% and renewables provide 14%. The share of oil falls to

25% and that of gas to 35% in the Proactive Scenario as hydropower and other renewables account for 22% and nuclear for 11% of the energy mix.

Encouraged by incentives, policies and technological advances, non-hydro renewables are expected to continue robust annual growth rates of 3.9% in the Conservative Scenario and 5.5% in the Proactive Scenario to 2040. Both the North and the South Mediterranean experience sustained growth in renewables.

The structure of energy demand has shifted markedly from a concentration in the industry sector to a wider range over the last two decades. Power generation has been taking an increasing share and that trend looks set to continue over the period to 2040. Demand for electricity sees robust growth with electricity generation growing with an average annual rate of about 2.1%. Renewables expand significantly and reach 40% of the generation mix in the Proactive Scenario in 2040, overtaking fossil fuels.

The production of fossil fuels across the Mediterranean region hardly increased at an average of 0.1% per year from 1990 to reach 359 Mtoe in 2013. Looking ahead, it is expected to increase by 1.4% per year on average to reach 518 Mtoe by 2040. Most of the increase in fossil fuels production will occur in the South Mediterranean. Oil production rises to 200 Mtoe by 2030 and maintains that level in 2040. Gas production - the fastest growing fossil fuel - expands from 148 Mtoe in 2013 to 252 Mtoe in 2040. Coal production increases by only 0.9% per year on average over the outlook period.

OIL STILL LEADS

Proven oil reserves in the Mediterranean region amounts 69 billion barrels, 4.2% of the world's proven oil reserves. Three countries - Algeria, Egypt and Libya - hold 94% of the Mediterranean's oil reserves. Many areas in the South Mediterranean, especially offshore, are either unexplored or under-explored for hydrocarbons, however.

Oil production in the Mediterranean region was at 3.6 million barrels per day in 2013, 4.8% of world oil production. The three largest oil producers - Algeria, Egypt and Libya - account for 90% of the region's oil output. Oil production is anticipated to remain stable until the end of this decade at around 3.5 million barrels per day. After 2020, it will increase significantly until 2040. Most of the increase will come from Libya, offsetting the declines in all the other Mediterranean countries. OME expects Mediterranean oil production to reach around 4.5 million barrels per day by 2040.

Oil demand in the Mediterranean region has increased by more than 50% over the last four decades, increasing on average by 1% per year from 1970 to 2013. The outlook is for a slightly faster pace of oil demand growth for the Mediterranean region at about 1.3% per year to 2040 in the Conservative Scenario. All the increase will stem from the South. Turkey will become the largest oil consumer in the region. Under the Proactive Scenario, total oil demand in the Mediterranean in 2040 is around its level in the mid-2000s.

Oil for transport grows faster than other sectors, to more than 60% of total oil demand by 2040. Oil demand for power generation declines in the region as a whole, down to 3.5% per year on average in the Proactive Scenario to 2040.

Overall, the Mediterranean region relies on oil imports. It will continue to do so. Egypt is today a net oil importer, leaving only Algeria and Libya as net oil exporters in the region.

NATURAL GAS TO REMAIN A FUEL OF CHOICE

The Mediterranean region has 4.5% of global natural gas reserves. Algeria, Egypt and Libya hold about 92% of the region's gas reserves. Algeria's share alone is 50%. More natural gas reserves could be located in the South West Mediterranean, which remains under-explored or unexplored. In the South East Mediterranean, the significant large-scale gas discoveries offshore Cyprus and Israel since 2009 and particularly in the deep waters of Egypt in 2015, have confirmed the substantial hydrocarbons potential of the area. The development of unconventional gas is just beginning in the region. Current activities focus on resource assessment and early exploration stages.

Natural gas production in the Mediterranean region has increased by 26% from 137 billion cubic metres (bcm) in 2000 to 173 bcm in 2013. It is expected to reach almost 300 bcm over the next 25 years, representing about 5.5% of global natural gas production by 2040. Production is expected to plateau around 2035 at about 310 bcm when both Algerian and Egyptian gas production peak, and start declining before 2040.

In the early 1970s, very few Mediterranean countries used natural gas. However, presently gas constitutes a significant share of the energy balance of the region. From 1990 to 2013, natural gas demand increased by 4.1% per year on average, about three times the growth rate of primary energy demand. The exploitation of newly discovered natural gas resources in the South Mediterranean and robust growth in gas-based electricity generation pushed the share of natural gas in the Mediterranean energy balance from 15% in 1990 to 28% in 2013. However, disparities exist between sub-regions. While gas markets in the South Mediterranean are increasing rapidly, gas demand in the North Mediterranean has been decreasing for some time. For the first time in 2013, more natural gas was consumed in the South Mediterranean than in the North. The outlook is for gas demand to increase further in both scenarios. Share of natural gas in Mediterranean primary energy mix will increase to over 30% by 2040 in the Conservative Scenario. In the Proactive Scenario, however, it will decrease due to the expanding use of renewable energy resources as well as demand reduction as a result of energy efficiency improvements. Egypt will become the largest gas consumer in the Mediterranean region by 2040.

Until the late 1990s, natural gas was used mainly in industrial processes and residential heating in the Mediterranean region. However, the situation changed during the 2000s as there was more demand for gas in power generation, which by 2013 was the largest gas-consuming sector at 41%. In the Conservative Scenario, power generation remains the largest gas-consuming sector, accounting for about 45% of total Mediterranean gas demand in 2040. The Proactive Scenario presents another picture. Natural gas used for power generation is much lower than in the Conservative Scenario and the industry sector returns as the largest gas-consuming sector in the region.

Currently the Mediterranean region as a whole is a net importer of natural gas. The South West Mediterranean is a net exporter but those exports are outweighed by imports in the North and South East Mediterranean countries. The outlook to 2040 anticipates that the Mediterranean region will remain a net gas importer.

Algeria, Egypt and Libya will remain net gas exporters over the outlook period. Cyprus and Israel will join the group in the next decade. Taken together, their total gas exports potential will increase to 55-120 bcm by 2040, depending on the scenario. Algeria will continue to account for more than half of the total gas exports from the South Mediterranean.

COAL, A DIVERSIFICATION OPTION

The Mediterranean region contains around 36 billion tonnes of coal reserves, about 4% of the global total. Almost all these reserves are located in five countries: Turkey, Serbia, Bosnia and Herzegovina, Greece and Albania. Majority of those reserves are lignite.

Coal production in the Mediterranean region was 206 million tonnes in 2013, of which more than a third was produced in Turkey. Coal production increases by a little less than 1% per year on average over the outlook period. By 2040, coal production reaches 250 million tonnes. Most of the increase will come from Turkey.

Coal demand has declined strongly over the past 20 years in the North Mediterranean and increased substantially in the South. Overall, coal demand in the region is relatively unchanged since 1990 at around 110 Mtoe, accounting for 11% of the Mediterranean energy mix in 2013; about 70% of which is used in power generation.

Coal demand outlook is quite different in the two scenarios. The Proactive Scenario assumes that natural gas, renewables and, in some cases, nuclear replace coal-fired power plants bringing total coal demand down to 80 Mtoe in 2040. In the Conservative Scenario, higher electricity consumption levels in the South and no major push for energy efficiency and renewables would lead to a coal demand level of 137 Mtoe in 2040, some 9% of the Mediterranean energy mix. The strongest demand increase stems from Turkey.

The Mediterranean region is a net coal importer. Coal import dependence, above 60% in 2013, is projected to remain above 60% in the Conservative Scenario but to drop to 36% in the Proactive Scenario.

THE POWER TO CHANGE

In the North Mediterranean, electricity generation has experienced rather weak growth of around 1.6% per year on average since 1990. Whereas the South Mediterranean had a robust average annual growth rate of 5.7%, especially in Turkey at 6.4% and Egypt at 5.9% from 1990 to 2013.

The outlook for electricity demand is also quite different across the shores of the Mediterranean. Slow economic and population growths in the North Mediterranean countries will temper growth rates for electricity demand. In the South Mediterranean, economies strive to develop to the level of industrialized ones and to improve living conditions for an expanding population. The outlook is for a reduced gap between the South and the North in electricity consumption on a per-capita basis, though the gap remains rather high even by 2040. For the entire region, the perspective to 2040 in the Conservative Scenario sees electricity generation growing with an average annual rate of about 2.1% (1.2% in the Proactive Scenario) and 4% in the South (2.6% in the Proactive Scenario).

Most of the growth in electricity demand is expected in the industrial and residential sectors, primarily in the South, with an average annual growth rate of 4% and 3.7% respectively in the period 2013-2040, according to the Conservative Scenario. Electricity demand growth could be considerably curtailed with gains in energy efficiency in the coming years according to the Proactive Scenario, reducing the average growth rate in the industrial and residential sector to 2.1% and 2.6% per year on average respectively. Turkey and Egypt in particular are poised to significantly increase their demand for electricity in the period to 2040, with an average annual growth rate of total final consumption respectively of 4.3% and 3.8% between 2013 and 2040, in the Conservative Scenario (2.4% and 3.2% in the Proactive Scenario).

A significant amount of power generation capacity has been installed in the Mediterranean region over the past three decades. In 2013, regional installed capacity stood at 583 GW, of which natural gas accounted for 35%, hydro 18%, non-hydro renewables 16%, nuclear 12%, coal 12%, and oil 7%.

In the outlook to 2040, installed capacity for the region increases by 443 GW in the Conservative Scenario and about 265 GW in the Proactive case. The most significant change is a substantial increase in the contribution of renewables to power generation. In the North, the increase in renewables generation will mainly come from wind power with about 95 GW brought online by 2040. In the South, non-hydro renewables expand to provide 19% - 40% of installed capacity depending upon the scenario. The outlook for new nuclear in the North is unclear in the aftermath of the Fukushima Daiichi nuclear accident in 2011, but should stand at around 11% to 9% of total installed capacity in 2040. In the South, nuclear is expected to enter the generation mix in the late 2020s, thanks to proposed projects, but delays may occur as a consequence of the recent developments.

A common objective for the entire Mediterranean countries is to make energy supply more secure, with less dependency on fossil fuels, and more sustainable, with exploitation of the energy efficiency high potential and development of the vast solar and wind energy resources available, particularly in the South. The potential for regional electricity trade is particularly significant, given the great complementarity of supply and demand profiles across the region. Nevertheless, despite such a cross-border trade potential, the volume of electricity exchanged among Euro-Mediterranean countries is presently very low. The sub-optimal exploitation of regional complementarities in terms of power exchanges is mainly due to a lack of cooperation between countries, a deficiency of transmission networks, a lack of technical coordination in terms of system operations and measures, as well as a lack of reserve capacity and an unsatisfactory regulatory harmonization.

Today, the evolutionary process for integrating Mediterranean electricity systems is articulated around three pillars: (i) technical coordination making possible the integration of cross-border networks; (ii) regulatory harmonization of national regulations; and (iii) political cooperation between Mediterranean countries. These three approaches are rooted in each single national will of the Mediterranean countries, which autonomously should implement reforms, possibly benefiting from the support of Med-TSO (in order to promote a closer and stronger coordination between TSOs), of MEDREG (to build a better and institutionalized cooperation among national regulators), of the Union for the Mediterranean (UfM), to enhance the political consensus, and of associations and organizations with a regional vocation, such as OME representing an important link between the industry, the financing sector and the scientific community operating in the Mediterranean area.

SUNNY AND WINDY FORECASTS

Renewable energy accounts for 11% of total primary energy demand in the Mediterranean, about 107 Mtoe in 2013. Whereas the contribution from hydropower has remained more or less constant over the years (at some 20 Mtoe per year since 2000), non-hydro renewables have experienced significant progression, with a two times growth since the year 2000, to reach more than 80 Mtoe in 2013. In particular, wind and solar PV have been showing the highest average annual growth rates since 2000, at 23% and 29% respectively. The outlook is for renewables to supply 18% of the of total primary energy demand by 2040 in the Conservative Scenario (203 Mtoe) and 21% in the Proactive Scenario (255 Mtoe). Non-hydro renewables are expected to achieve a two-fold increase in the Conservative Scenario and almost a three-fold increase in the Proactive Scenario.

Currently, almost 80% of the region's renewable energy supply is in the North Mediterranean countries (84 Mtoe in 2013). The remainder is concentrated in few South Mediterranean countries, mostly in Turkey (14 Mtoe). By 2040, North Mediterranean countries are expected to maintain a larger share of renewables in primary energy demand in both scenarios, but stronger growth is foreseen for non-hydro technologies (particularly wind and solar) in the South and East Mediterranean, as a result of the evolving regulatory framework and the introduction of stronger policy support measures.

Hydropower and other renewables accounted for 34% (196 GW) of the region's installed electricity generation capacity in 2013, the second largest source of electricity after natural gas. Hydropower has been long established. Non-hydro renewables have shown an impressive progression, doubling installed capacity in only five years - from 2009 to 2013 - to reach 92 GW. Largely underlying this trend is the spectacular increase in wind and solar PV generation installed capacity. The outlook to 2040 projects renewables at 478 GW in the Conservative Scenario and 577 GW in the Proactive Scenario; two-thirds of total electricity generation installed capacity. In both cases, the share of renewable energy technologies would be higher than the one of fossil fuels.

Reaching the Proactive Scenario implies adding capacity of about 15 GW per year on average over the next 25 years, most of which by non-hydro technologies (14 GW). North Mediterranean countries are expected to add about 9 GW of new renewable capacity per year on average to reach a total of 396 GW by 2040 (thus more than doubling current RE power installed capacity). South and East Mediterranean countries will contribute with more than 6 GW per year, to reach 181 GW by 2040, a five times growth in the Proactive Scenario compared to current levels. This would completely change the electricity market supply and demand structure in South and East Mediterranean countries.

Total electricity output from renewables in the Mediterranean region was almost 500 TWh in 2013, 25% of total electricity production. About 60% of the renewable-based electricity was generated by hydropower facilities, with the remainder mainly from wind (112 TWh, 57% of the non-hydro renewable electricity). The outlook to 2040 is for significant increases in electricity fuelled by renewable resources across the Mediterranean region. In the Conservative Scenario, renewables provide over 1200 TWh (34% of electricity production) by 2040. In the Proactive Scenario, renewables produce more than 1400 TWh, more than 50% of electricity production.

Assessments of several renewable energy technologies conducted either at the regional level or on single countries show very favourable potential of renewable energy for electricity, heat and transport. Renewable energy technologies could contribute to a larger share of the Mediterranean energy mix compared to MEP scenarios. Tapping into this potential, however, requires a combination of stronger political will, availability of capital and more effective regional cooperation.

ENERGY EFFICIENCY IS KEY

The potential for energy efficiency and conservation is substantial in the Mediterranean region. In the North, the European Union has set a target to achieve 20% energy savings by 2020, and 27% by 2030. Although significant progress has been made, these targets remain challenging. The new Energy Efficiency Directive of October 2012, together with its sister directives on eco-design, buildings, labelling... set a common framework for all countries of the European Union.

In the South Mediterranean, regulatory frameworks have evolved in a more homogeneous

manner notably with the initiative of the “Arab guideline for improving electricity efficiency” the basis of which are transposed from the former European Energy Efficiency Directive. However, policies set by states in this framework have yet to be enforced, which also requires public awareness and capacity building.

Overall, energy intensity is decreasing in the region, largely driven by the industry and transport sectors. Energy intensity was 0.12 tonne of oil equivalent (toe) per USD 1 000 of gross domestic product (GDP) in 2013. It is expected to reach 0.10 toe per USD 1 000 of GDP under the Conservative Scenario and 0.08 toe per USD 1 000 of GDP under the Proactive Scenario in 2040. Though energy intensities are generally decreasing, the broad trends mask varied situations between countries. Electricity intensity has increased across the Mediterranean region, largely driven by the buildings sector. Across the region, electricity intensity was 0.21 MWh per USD 1 000 of GDP in 2013. It is expected to remain at the same level in the Conservative Scenario and decrease to 0.17 MWh per USD 1 000 of GDP in the Proactive Scenario.

According to the Proactive Scenario, around 20% of primary energy demand can be saved by 2040 in the whole region. The potential saving in 2040 amounts to 270 Mtoe. Energy savings in total final energy consumption could reach 157 Mtoe in 2040, about 60% of total energy savings. Most of the end-use energy savings stem from the South Mediterranean and from the industry and buildings sector. The cumulative potential savings of electricity demand in the whole region is about 9 382 MWh over the outlook period 2014-2040, which is nearly five times the current total Mediterranean electricity generation, or more than the last twelve years of electricity generated in the South sub-region.

CONVERGENCE TENDENCY BUT INEQUALITIES REMAIN

Per capita energy demand in the South is currently 2.5 times lower than in the North. As South populations improve their access to modern energy services, this average would increase substantially to 2040 (+74% compared to current levels) under the Conservative Scenario. The increase in the South could be capped efficiently in the Proactive Scenario, yielding an increase limited to +34% in 2040. Electricity per capita is set to increase in the South - more than 116% in the Conservative Scenario and 53% in the Proactive Scenario; however regardless of the scenario, South Mediterranean per capita electricity demand is set to remain well below the North Mediterranean average in 2040 respectively at 41% and 52% of total per capita average.

On a per capita CO₂ emissions basis, the North Mediterranean countries are expected to continue their decreasing trend particularly in the Proactive scenario (35% decrease in 2040 as compared to 2013 and - 18% in the Conservative scenario) taking benefit from access of its population to more efficient and cleaner energy services in a present context of high access to energy. In the South, CO₂ emissions per capita are expected to continue growing although to a relatively lower extent than in the past (respectively +56% and +11% in the Proactive Scenario for the South West and +69% to +12% for the South East). This is mainly driven by the high socio-economic growth and the related increase for energy demand in a present context of relative modest access to energy services, at least when compared to the situation in the North. However, despite these convergent trends in the two sub-regions, disparities will still exist.

TOWARDS A CLEAN, AFFORDABLE, SAFE AND SOUND ENERGY FUTURE

The Proactive Scenario would have two major striking impacts on energy security and environment.

Energy import dependence would rise from 40% in 2013 to 41% in 2040 in the Conservative Scenario, exacerbating the tensions in the region, while the Proactive Scenario would lower significantly the energy import dependence down to 24% in 2040. Today the Mediterranean region imports nearly half of its fossil fuel requirements. The South Mediterranean region greatly improves its fossil-fuel import slate in the Proactive case with less than 4% of imports, while the Conservative Scenario trend would increase its net fossil fuel imports from 5% in 2013 to 34% in 2040.

On the related CO₂ emissions and thanks to the important energy savings described above (20% of primary energy demand), avoided emissions could be significant. Indeed, from 1970 to 2013, CO₂ emissions from fuel combustion more than doubled in the Mediterranean region to nearly two billion tonnes, representing 7% of global CO₂ emissions in 2013. By 2040, these emissions are expected to increase by nearly 45% in the Conservative Scenario and by 6% in the Proactive Scenario – about 750 Mt difference. Most of the increase would be attributable to growing fossil energy use by the South Mediterranean countries, with average annual CO₂ emissions growth rates of 1.4% in the Conservative Scenario and 0.2% in the Proactive outlook.

Carbon intensity, defined here as the quantity of CO₂ emitted by one unit of gross domestic product, is expected to decrease between 2013 and 2040 in all sub-regions. This indicates that the region is engaged in the decarbonisation of its economies both in the North and in the South although important disparities will remain between the sub-regions and between countries.

In this context, it is obvious that energy choices made today in the Mediterranean countries and region will determine the energy future over the next decades, given the long investment cycles in this sector. Key elements of a transformation towards sustainable energy entail designing and implementing robust policy and regulatory reforms, thus creating attractive investment climates; strengthening the institutional capacity and creating effective business models, building the necessary skills in the labour force to match the market needs and facilitating financing for investments from public, private, national and international sources. In this perspective, regional cooperation has an important role to play.

Regional cooperation in the Mediterranean region has been underway for decades and is still being developed. While oil and in particular natural gas have brought about fruitful cooperation among Mediterranean neighbours and contributed to building long term partnerships for decades, nowadays, electricity, especially electricity generated from renewable energies and energy efficiency, emerge as other strong drivers for reinforcing regional cooperation. The launch of three energy platforms under the auspices of the UfM and the definition of a new neighbourhood policy represent positive signals of willingness to revitalise energy cooperation in the Mediterranean region. These must translate in concrete and concluding results to the benefit of all.

On a wider scale, the framework of the energy system to contribute to sustainable development has been discussed at international level for over the last 20 years. More recently, the Intended Nationally Determined Contributions, INDCs, introduced in the process of COP 19 are a key element for a global implication of all countries in combating

climate change. Most Mediterranean countries have published their official INDC's in view of COP21 in 2015 in Paris.

The Mediterranean submitted INDCs indicate that energy is the first sector to be considered. Two main actions are in particular underlined: energy efficiency and renewable energy. The change of fossil fuel in favour of natural gas is also mentioned in different proposals. In the transport sector, actions related to public transport are proposed. Most of the contributions mention the waste and water treatment sector as an opportunity. Forest conservation and reforestation are also contributors. The quality of the follow up will determine the final success of this approach against the targets set by the climate constraints and development objectives.

Moreover, there is an opportunity to develop climate policies in the broad context of a shared sustainable development as proposed in the recently adopted Sustainable Development Goals. Goal 7 "affordable and clean energy" declines specific targets for energy as an element to serve the global view of sustainable development.

MEP 2015 clearly illustrates that all the above mentioned targets are not yet reached in the Mediterranean region and the proactive scenario is the no regret option and the scenario to follow although more and better can be done to reach a desirable clean, affordable and safe energy future in the region. Considering the wide range of challenges the region is facing, it becomes more than urgent to speed up the energy transition. Considering the huge needs, the technological evolutions, there is room for opportunities to all. This requires however, a shared vision and adapted strategies yet to be defined.

MEDITERRANEAN ENERGY PERSPECTIVES

Mediterranean Energy Perspectives 2015 (MEP 2015) provides insights into the past and possible future evolution of the energy situation in the Mediterranean region. It presents detailed data and analysis of both the supply and demand side of the energy equation in the Mediterranean region. It is the third issue of a regular publication – the MEP series - whose aim is to compile and present the extensive work of the Observatoire Méditerranéen de l'Énergie (OME). The publication draws upon the expertise of OME and its members.

MEP 2015 is a unique and comprehensive analysis of the energy sector in the Mediterranean region. It contains long historical data, as well as perspectives to 2040 based on an exhaustive supply and demand model (Mediterranean Energy Model) developed by OME and two scenarios of evolution.

MEP 2015 presents:

- A description of the Mediterranean countries in the global context,
- Historical and forecast data on the supply and demand balance by energy source and for each segment of the Mediterranean energy sector,
- Energy demand scenarios up to 2040, under a Conservative Scenario and a Proactive Scenario,
- Past, present and future of oil and gas exploration, production and development,
- Evolution of electricity generation, installed capacity, and infrastructure,
- Developments of innovative and renewable energy sources,
- Energy efficiency,
- Impacts on energy import dependence and CO₂ emissions.

MEP 2015 has been prepared by OME experts and benefited of input and review from OME member companies and independent experts. Bringing this expertise together provides an important reference for energy analysts, investors and all those who need to get a comprehensive picture of the energy industry and markets in the Mediterranean, the way they operate and their long-term perspectives.

MEP 2015 is an indispensable source for policy makers, researchers and members of the business community.

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