



Fossil Generation Report Q1/2009
DRAFT

Agenda

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1. Executive Summary

Work in progress

Comments to do:

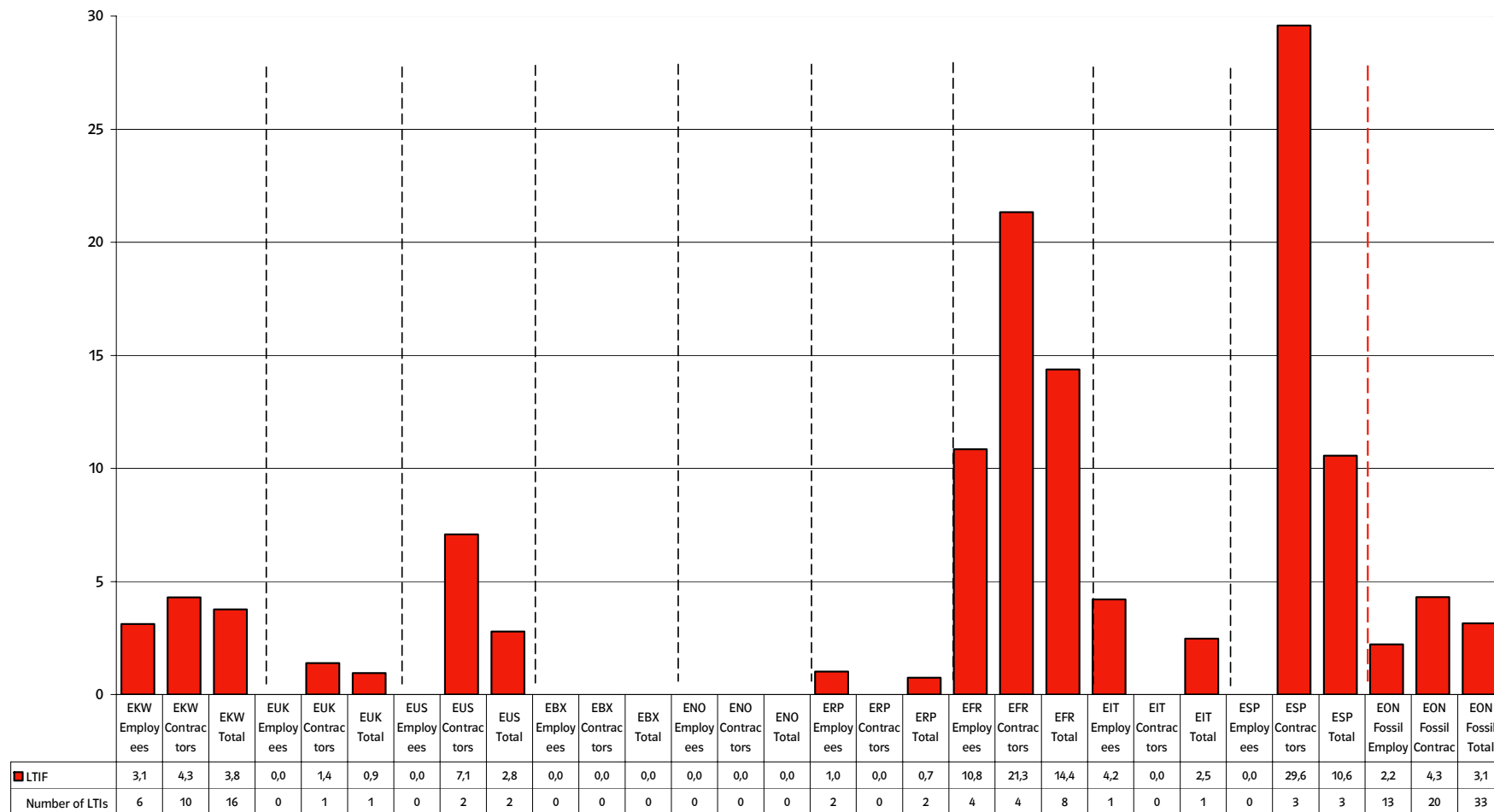
Bravalla not included, UCML in cold reserve, CCGT Den Haag increases (in Appendix after confirmation), CCGT/CHP Malmö is being commissioned, hedging risks for CHP (ENO comment), Problems with rocking in Tavazzano (EIT comment), minimum load reduction in CCGT from 40% to 35% (EIT-comment), FAD-problems, SAP-BI starting difficulties, changed capacities in Appendix

If you have any comments, additions or concerns, please contact Lars Küpker at the CoC Fossil (lars.kuepker@eon-energie.com).

2. Safety performance

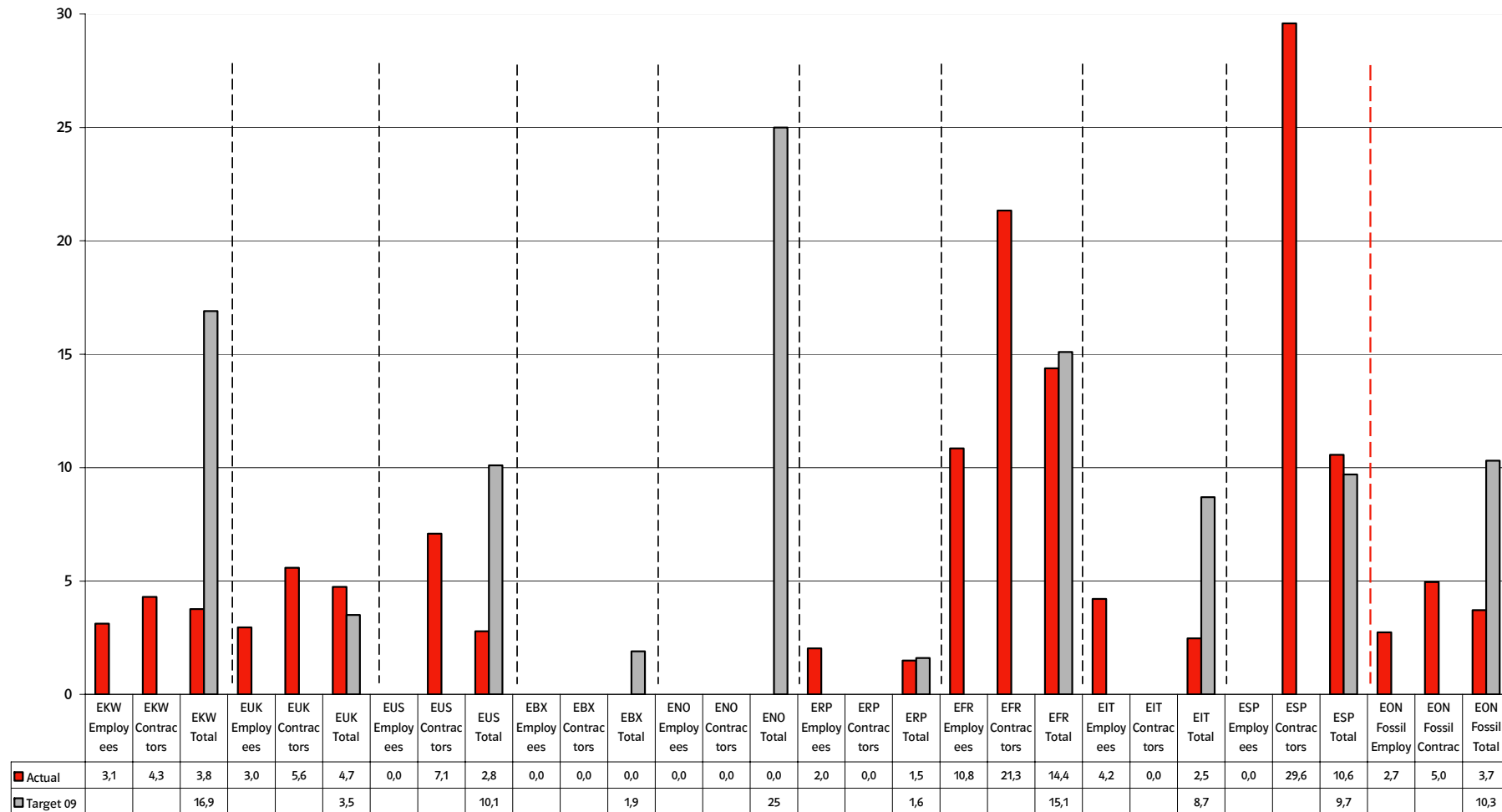
Lost Time injury Frequency (LTIF)

Safety performance: LTIF



Total Recordable Injury Frequency (TRIF)

Safety performance: TRIF – overall view



Starting with this report, the figures contain data for employees and contractors for all MU/BU. The first graph shows LTIF results for the Fossil Fleet, while the second graph adds restricted workcases, medical aid and fatalities. Fortunately, the Fossil Fleet has reported no fatality in the first quarter.

The 2009 target for safety performance has been agreed on TRIF and the charts show that we are well below the target.

The charts show the highest value in MU Spain for contractors. There happened 3 incidents in the first quarter of 2009 and the MU reacted with a stronger insistence in the importance of using safety equipment. No additional safety events with employees occurred in MU Spain in Q1.

E.ON France reported the highest overall value in Q1. 4 accidents occurred while workers stumbled. MU France also reported that they have nominated a Safety manager since February 2009 and have installed defibrillators to raise safety in all units.

At EKW, Scholven had an accident with "three toe amputation" which was followed by an investigation by an independent audit-team. The results of the investigation have been communicated all over the EKW-sites.

Another focus were injuries concerning tripping and hurting the foot-angle and this topic was theme for a special presentation spread all over the EKW.-

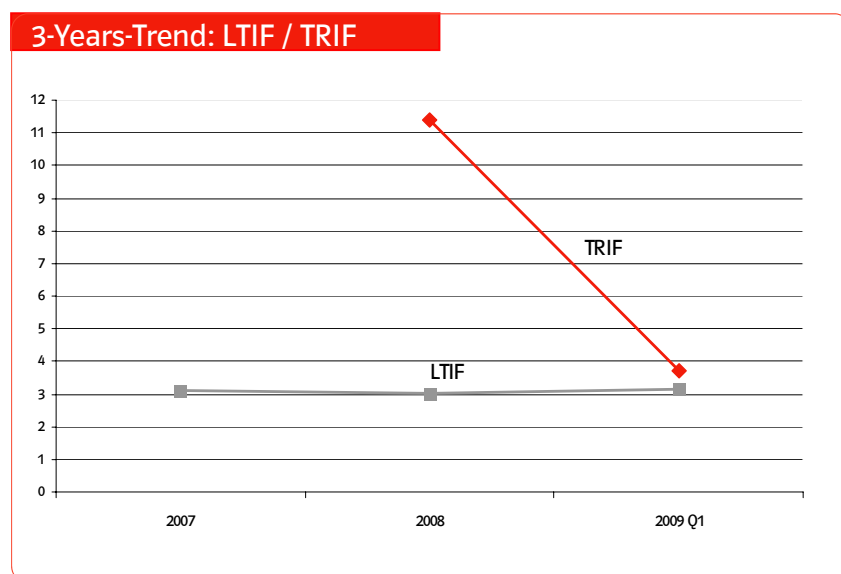
EKW and EBX (Maasvlakte) has started an exchange concerning safety culture and on-site procedures.

MU UK had an "RIDDOR" reportable incident when a contractor was found unconscious after suffering the results of vaso vagal syndrome subsequent to sustaining a cut finger. Actions are being take to eliminate or reduce the hazards associated with the minor injury that triggered the vaso vagal response.

Beyond that, a wholesale review of contactor engagement events in the UK has led to the formation of a series of improvement projects.

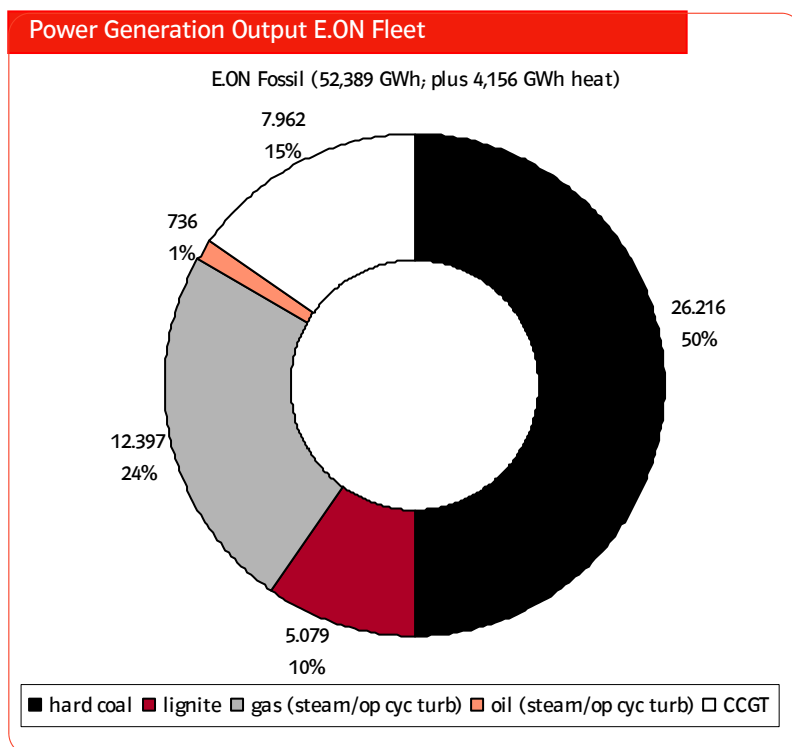
At MU Russia, the two incidents were a fracture of leg and an injury of the hand, both caused by personal inattentiveness. The causes and circumstances have been investigated and communicated with the staff.

E.ON Benelux and E.ON Nordic reported a LTIF and a TRIF of 0 in the first quarter.

LTIF / TRIF Trend

The trend shows the development of the Safety KPIs LTIF and TRIF for the whole Fossil Fleet. Please note that the power plant units have changed during the years, especially from 2007 to 2008 when MU Russia, Spain, Italy and BU France have joined.

3. Power Generation Output



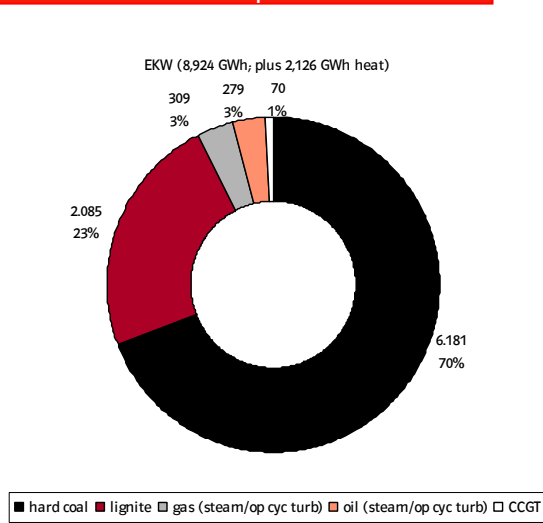
The composition of the E.ON Fossil Fleet output changed in comparison to the previous quarter.

EKW does not report the plants anymore that are part of the Swaps with Statkraft from Norway resp. with the European Commission. With the coal-fired plants of Farge, Mehrum, Veltheim (incl. the gas unit) and Zolling (incl. the oil unit) as well as the gas-fired plants Emden, Robert Frank and Ummeln, EKW has decreased their installed capacity by 3,314 MW in this report. Therefore, the output from EKW is significantly below last year.

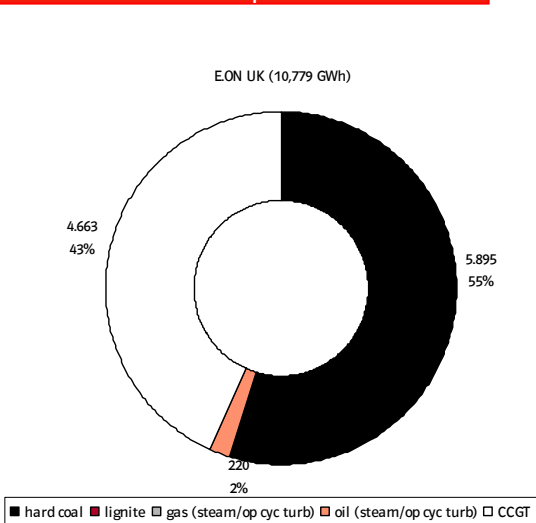
On the other hand, we have added the new unit Livorno Ferraris (EIT, CCGT with 800 MW) and the capacity increases of Provence 5 (EFR, hard coal with now 595 MW) and Escatron (ESP, CCGT with now 804 MW).

Öresundsverket CHP (ENO, CCGT with 450 MW) and Irsching 4 (EKW, gas-fired with 845 MW) will follow later this year.

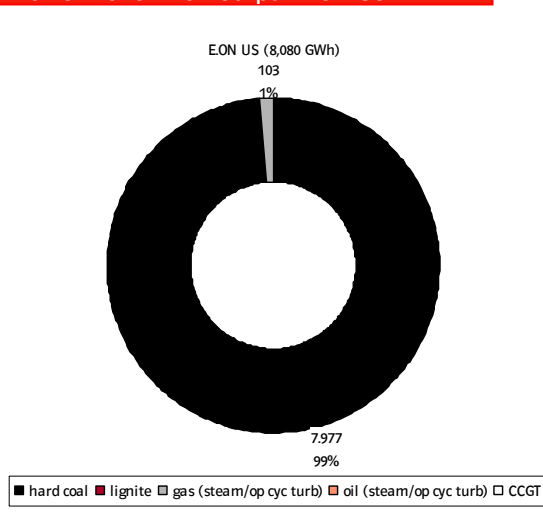
Power Generation Output EKW



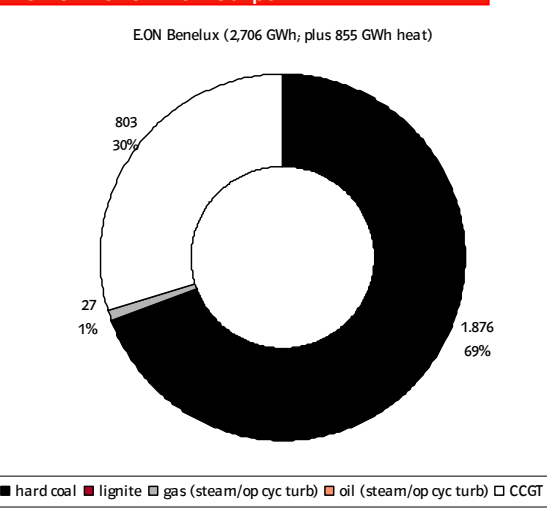
Power Generation Output E.ON UK



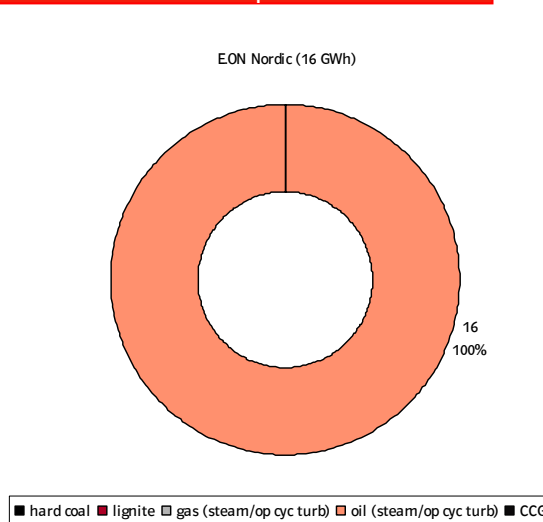
Power Generation Output E.ON US



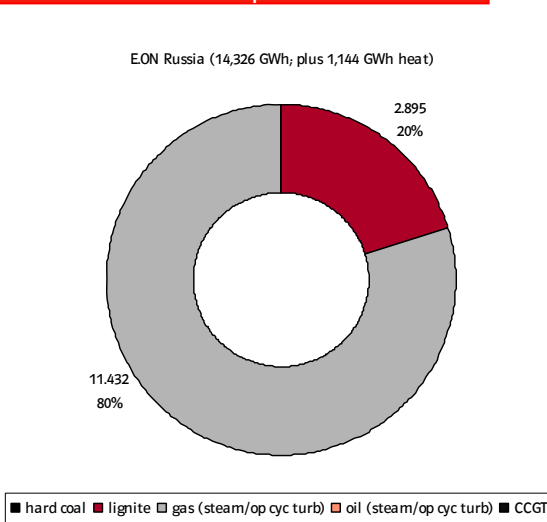
Power Generation Output EBX



Power Generation Output E.ON Nordic

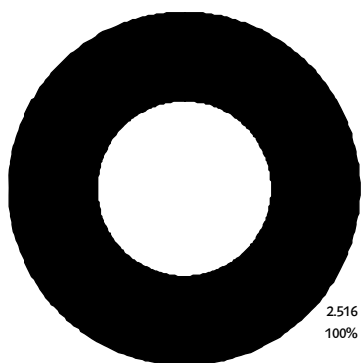


Power Generation Output E.ON Russia



Power Generation Output E.ON France

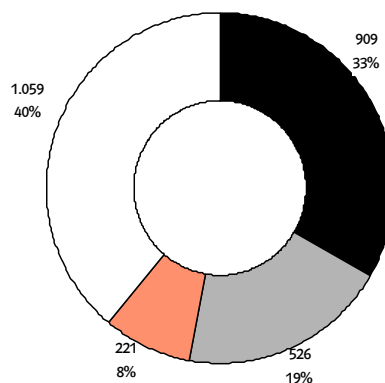
E.ON France (2,516 GWh)



■ hard coal ■ lignite ■ gas (steam/op cyc turb) ■ oil (steam/op cyc turb) □ CCGT

Power Generation Output E.ON Italy

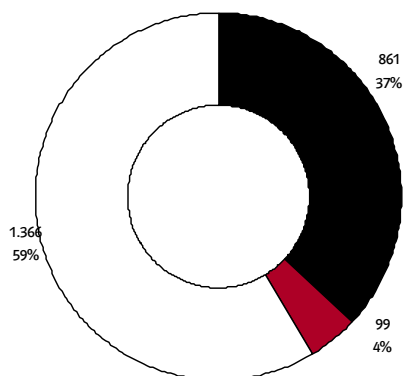
E.ON Italy (2,715 GWh)



■ hard coal ■ lignite ■ gas (steam/op cyc turb) ■ oil (steam/op cyc turb) □ CCGT

Power Generation Output E.ON Spain

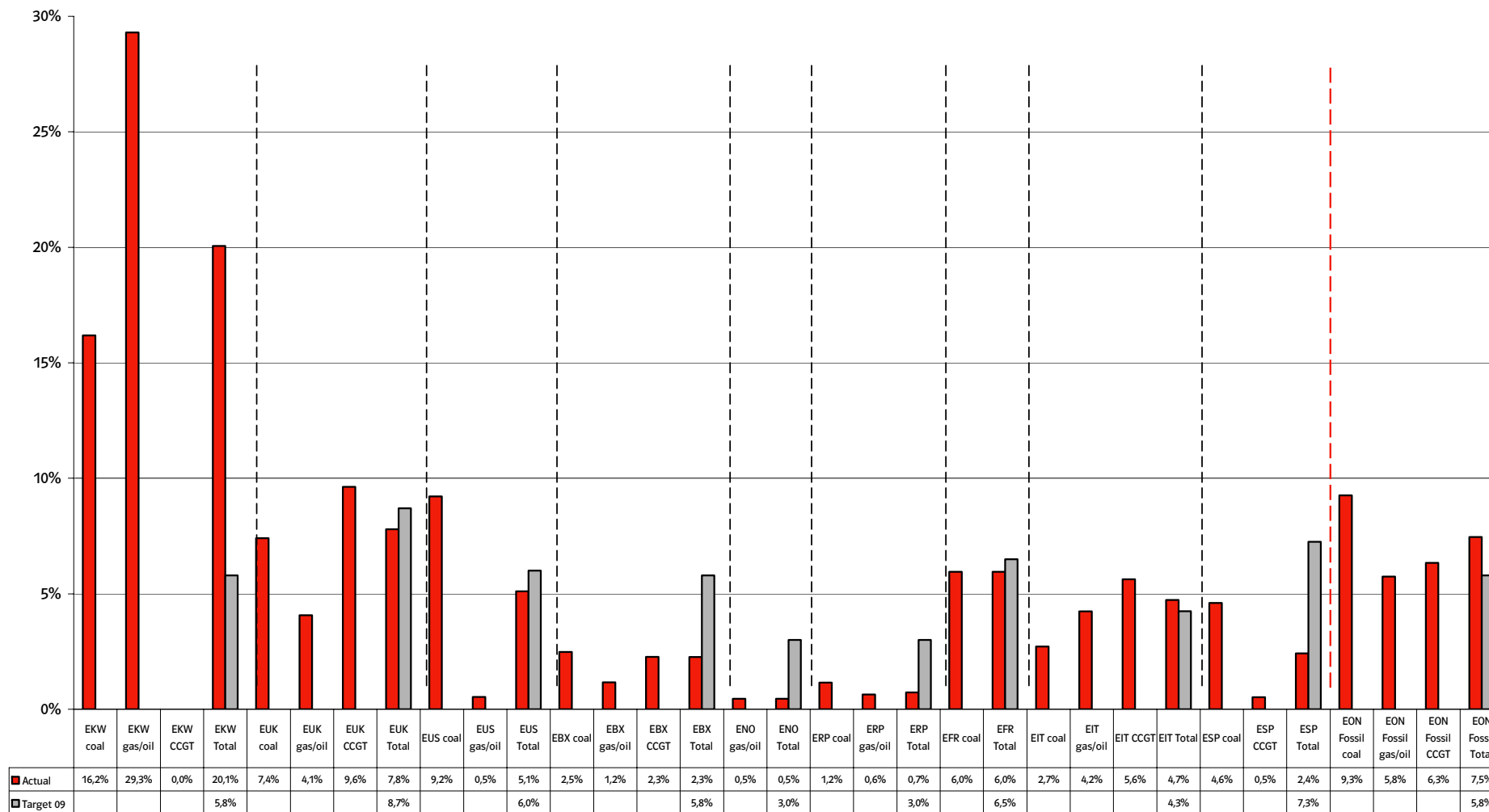
E.ON Spain (2,326 GWh; plus 31 GWh heat)



■ hard coal ■ lignite ■ gas (steam/op cyc turb) ■ oil (steam/op cyc turb) □ CCGT

4. Unplanned Unavailability

Unplanned Unavailability



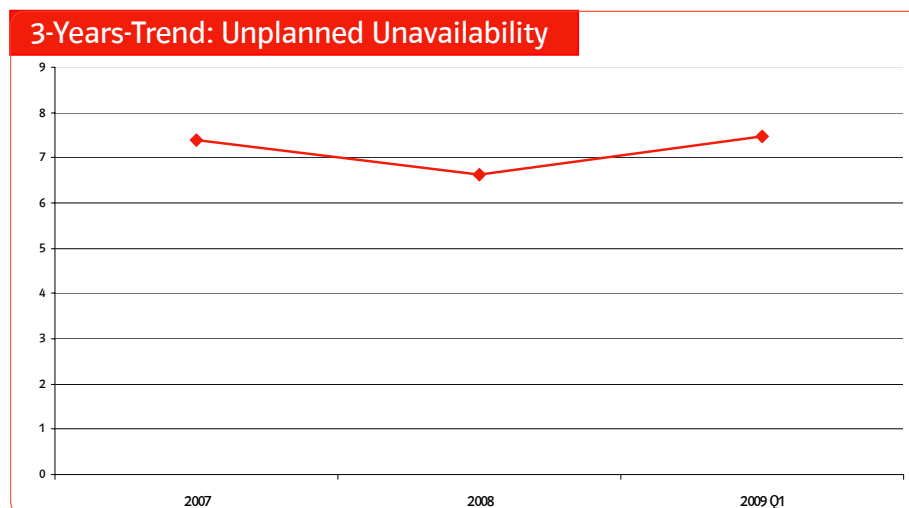
The target for the Fossil fleet is endangered regarding the figures of the first quarter.

This was mainly caused by EKW reporting an UU value of 14.3 percentage points above the target which is 5.8%. The reasons for this deviation were generator failures at Wilhelmshaven (1,380 GWh lost), Ingolstadt 3 (1,130 GWh lost) and Irsching 3 (322 GWh lost). To lower the probability of further events of this nature, EKW is currently developing an updated pooling strategy for spare parts and adopt the experiences for maintenance strategies of similar types of generators.

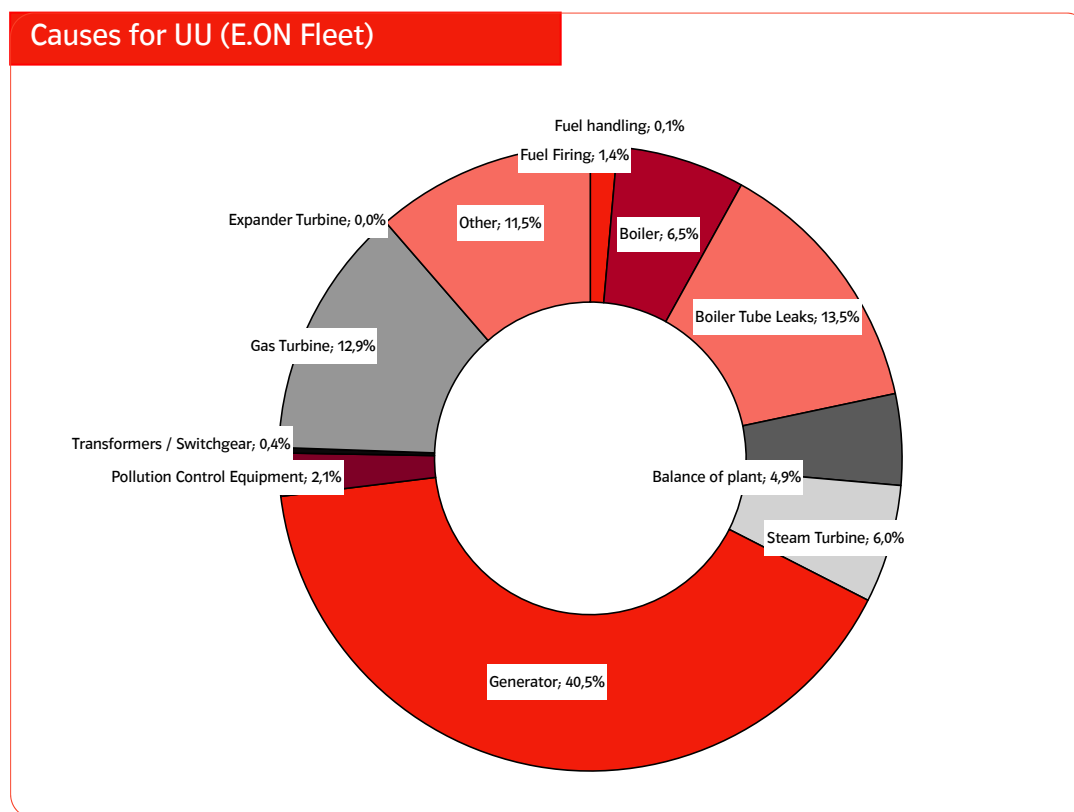
Other big incidents (>100 GWh lost) occurred in the first quarter of 2009 at the following units:

- Connah's Quay 3 (EUK): GT Rotor Failure, 381 GWh lost
- Ostiglia 1 (EIT): Compressor failure at gas turbine started from 6th row of blades. The cause has not been discovered yet, restart expected for June 2009; so far 269 GWh lost
- Ghent 1 (EUS): no more information available, total of 227 GWh lost
- Trimble County 1 (EUS): no more information available, total of 137 GWh lost
- Ratcliffe 2 (EUK): Variety of Tube Leaks, 119 GWh lost
- Emile Huchet 6 (EFR): Boiler Tube Leaks, 105 GWh lost

Unplanned Unavailability Trend

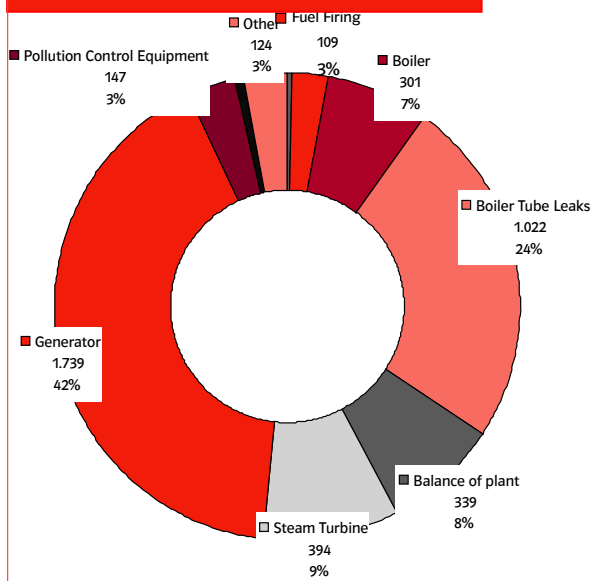


The graph shows a reversal of the trend and highlights that a close monitoring during the upcoming quarters is highly recommend to reach the target of 5.8% for 2009.

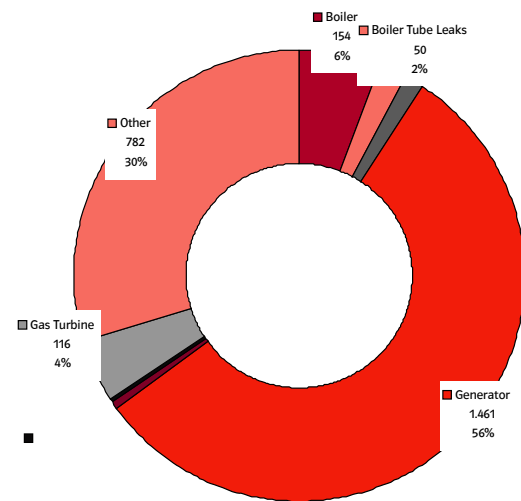
Causes of Unplanned Unavailability

Overall, the E.ON Fossil Fleet lost 8,011 GWh due to Unplanned Unavailability in the first quarter of 2009. The dominant causes were Generator issues as mentioned before. Besides this extraordinary effect, Boiler tube leaks would still cause the highest losses.

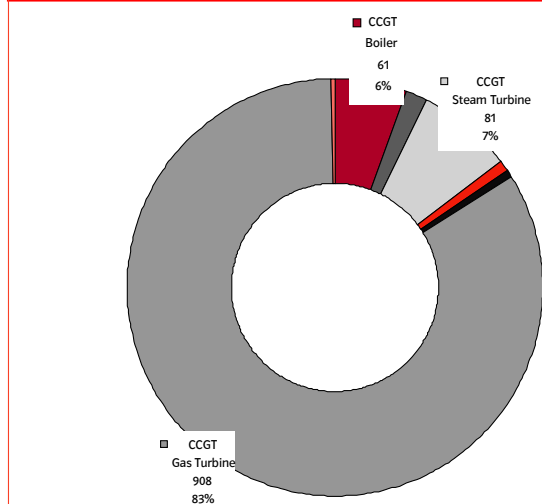
Causes for UU in GWh lost (coal)



Causes for UU in GWh lost (gas/oil)

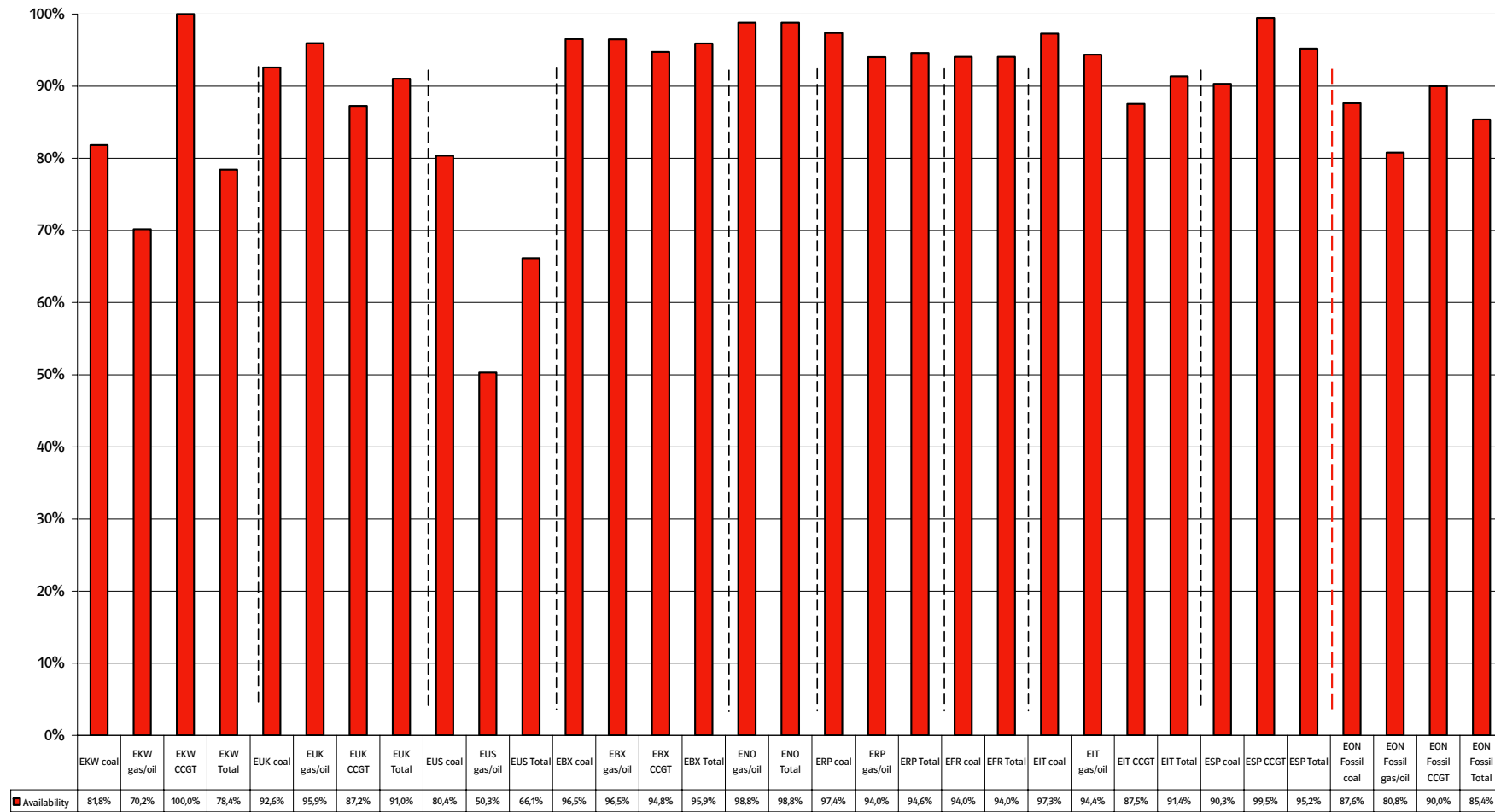


Causes for UU in GWh lost (CCGT)



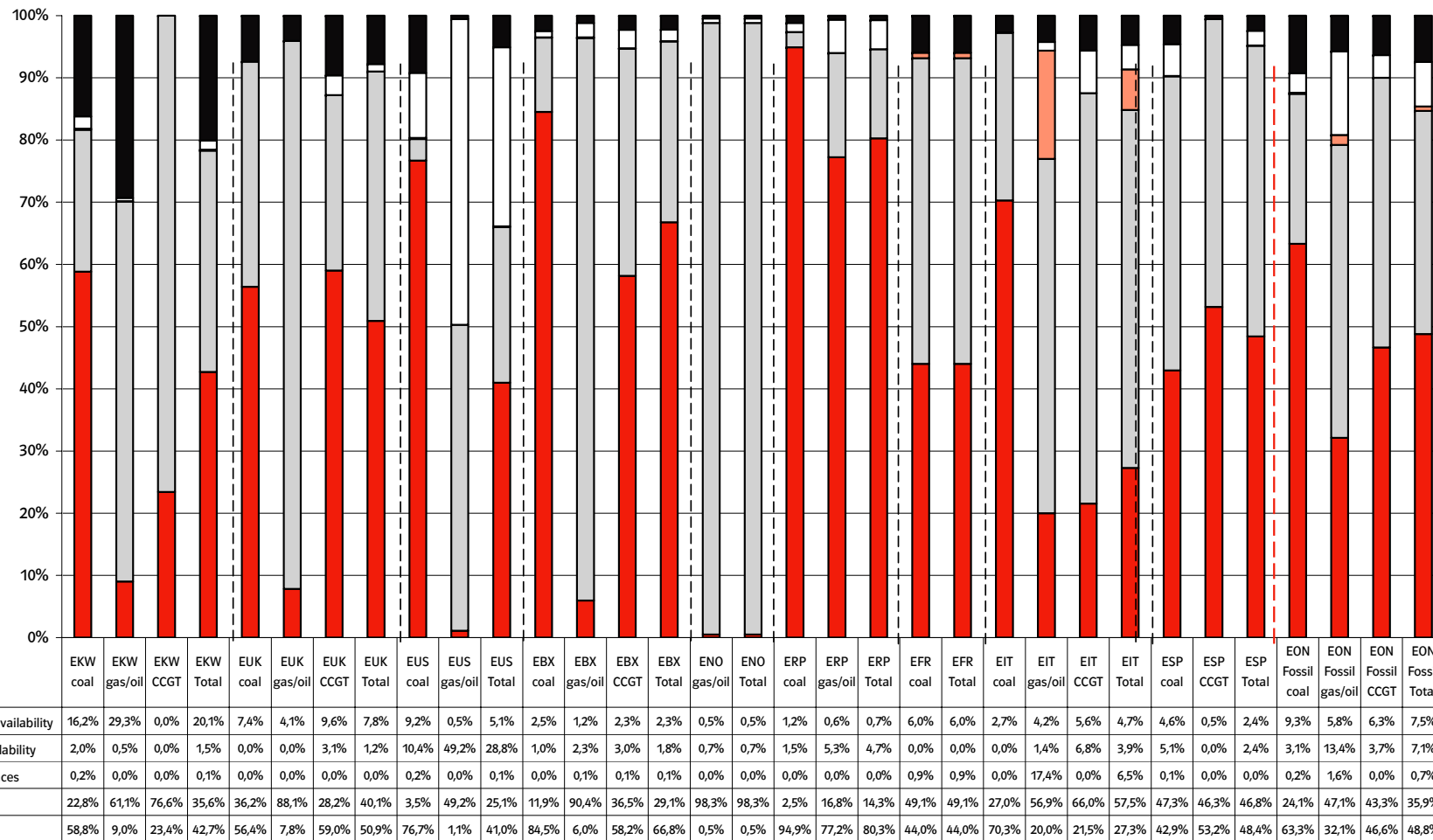
5. Availability

Availability



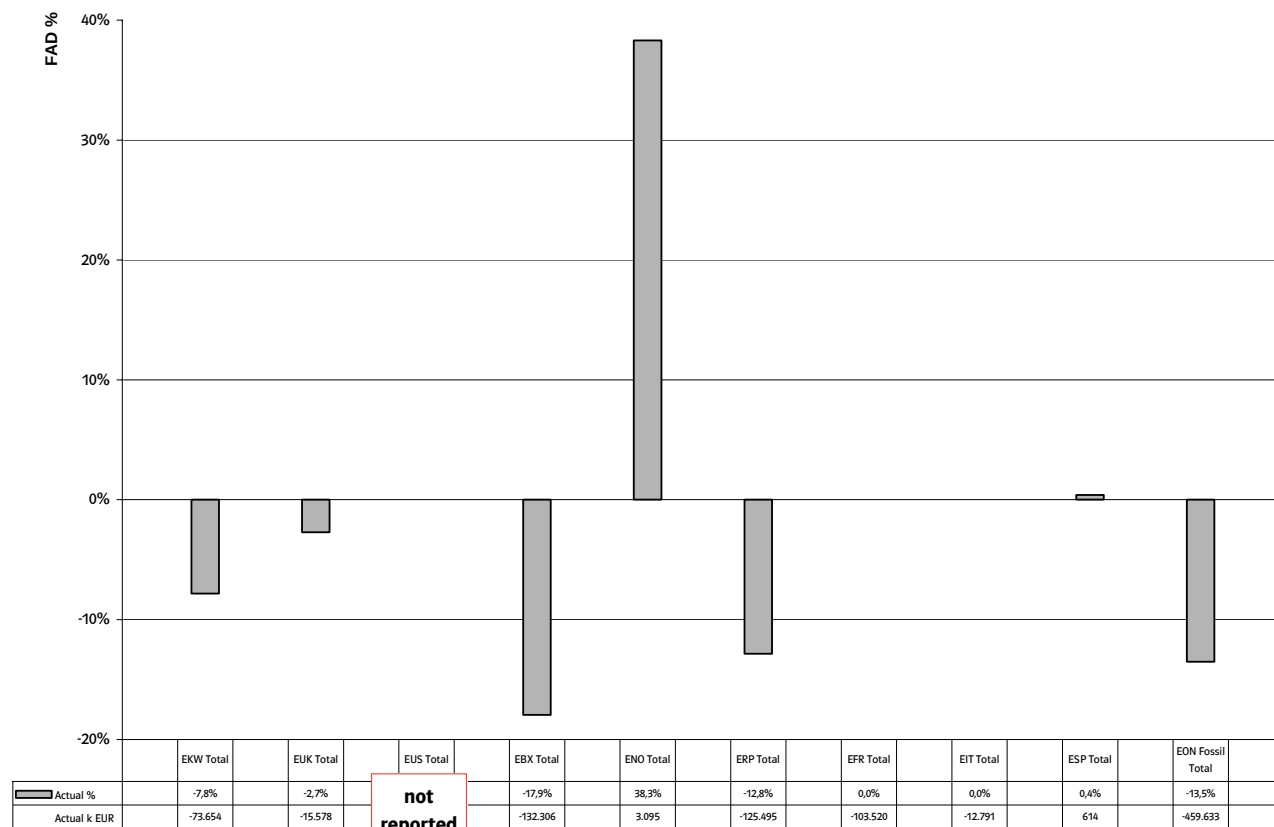
6. Utilization

Utilization



7. Financial Availability Deviation (FAD)

Financial Availability Deviation (FAD)



The FAD was reported for the first time and has a target for all MU/BU. According to the GSC-f decision, it is defined as "Generation EBIT" (budget) minus "Generation EBIT" (forecast), where the "Generation EBIT" contains Revenues (capacity fee resp. option premium, based on contract with EET or similar) and Controllable Costs Fossil (O&M costs and local administrative costs).

While the target is $FAD \geq 0$, only E.ON Nordic and E.ON Spain meet the demands after the first quarter.

EKW's deviation was mainly affected by the Generator failures of Wilhelmshaven and Ingolstadt 3. The low prices for electricity lower the loss for unplanned unavailability.

E.ON Russia reported that the lower revenues are mainly driven by lower prices at the market as a result of financial crisis and devaluation of Rouble. They assume the changes in availability are not influencing the lower revenues.

MU Italy commented the FAD with an effect from the compressor failure at Ostiglia 1 which explains almost half of the deviation (4.9 M EUR).

The reasons for the high peaks in Nordic and Benelux have to be investigated further.

8. Work topics of the CoC Fossil

e-on		COC Project Status		Reporting Date Q1 2009																												
1. Project data			5. Key Risks and Issues																													
Project Name	EON SCR CATALYST MANAGEMENT		Features of the US MU and the UK MU.																													
Project Number	004																															
Related KPIs																																
Project Phase	Development																															
Responsible Person	Lothar Schreiber / Eric Pimpinelli																															
Start/End of Project	2008 / 31.12.2008																															
Market Unit	EEA ENO EUK EUS EIT EES ERP																															
2. Project Rationale			6. Key Activities and Key Milestones																													
The objective of the SCR Catalyst Management Program is to take advantage of having a big SCR fleet. It means that the consolidation of E.ON's knowhow and an independent expertise will create high performance and considerably reduce the group's costs in what is considered to be the most expensive "wear and tear" elements in modern fossil plants.			Warranty issues in relation with Ratcliff plant in UK Solution : To not include the units 1 and 2 in the SCR management program Financial issues in relation with environmental law in US MU Solution : Calculation of the balance in each case																													
3. Project Goals			7. Deliverables and Achievements to Date																													
- 2.7 millions euros to save per year for the existing fleet - 10 millions euros to save one time for the new build project - It could be the first fleet-wide standard tool since set up of GSC-f and CoC-f - Implement and apply the SCR Catalyst management, directives, standards and best practices			One contract for the Europe fleet : plate design catalyst : 31/12/2008 One contract for the Europe fleet : honeycomb design catalyst : 31/12/2009 Meree of the two contracts above : 2010																													
4. Status			8. Next Steps, Future Actions and Deadlines																													
Overall Status <table border="1"> <tr> <td>Schedule</td> <td></td> <td></td> <td>100%</td> <td>% complete</td> </tr> <tr> <td>Resources</td> <td></td> <td></td> <td>100%</td> <td>% complete</td> </tr> <tr> <td>Goal</td> <td></td> <td></td> <td>100%</td> <td>% complete</td> </tr> </table>			Schedule			100%	% complete	Resources			100%	% complete	Goal			100%	% complete	<table border="1"> <thead> <tr> <th>Task</th> <th>Responsible</th> <th>Due Date</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Implementation of the recommendations</td> <td>CoC - Pimpinelli</td> <td>31.12.2009</td> <td>in process</td> </tr> <tr> <td>Contract for the Europe fleet : honeycomb design</td> <td>Purchasing dpt</td> <td>31.12.2009</td> <td>in process</td> </tr> </tbody> </table>			Task	Responsible	Due Date	Status	Implementation of the recommendations	CoC - Pimpinelli	31.12.2009	in process	Contract for the Europe fleet : honeycomb design	Purchasing dpt	31.12.2009	in process
Schedule			100%	% complete																												
Resources			100%	% complete																												
Goal			100%	% complete																												
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Contract for the Europe fleet : honeycomb design	Purchasing dpt	31.12.2009	in process																													

e-on		COC Project Status		Reporting Date Q1 2009																			
1. Project data		5.1 Risks and Issues		5.2 Actions against risks																			
Project Name	Outage Management																						
Project Number	CoC 2008-009																						
Related KPIs	Safety, Availability, UU90																						
Responsible Person	Torsten Wehking																						
Project Phase	Development																						
Start/End of Phase	June 2008 / April 2009																						
Market Unit	CE ENO EUK EUS EIT EES ERP																						
2. Project Rationale		6. Ongoing Key Actions																					
Improving the EON fossil fleet by optimisation the Outage Management Process		Production of the final report																					
3. Project Goals		7. Deliverables during current reporting quarter																					
- Improve Safety during outages - reduction of outage delays - reduction of budget overspends - reduction of unplanned unavailabilities post outage (UU90)		Initiation document scope/scope change documents finalised Risk assessment of scope items drafted Safety document drafted Quality document finalised Outage preparation document finalised Outage evaluation document finalised																					
4. Status		8. Future Actions (planned actions, not pending)																					
Development Phase Implementation Phase Overall project progress <table border="1"> <tr> <td>Schedule</td> <td></td> <td></td> <td>95% complete</td> </tr> <tr> <td>Resources</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Goal</td> <td></td> <td></td> <td></td> </tr> </table>		Schedule			95% complete	Resources				Goal				<table border="1"> <thead> <tr> <th>Task</th> <th>Responsible</th> <th>Due Date</th> </tr> </thead> <tbody> <tr> <td>Finalising and distribution the final report</td> <td>T. Wehking</td> <td>30. Apr</td> </tr> </tbody> </table>				Task	Responsible	Due Date	Finalising and distribution the final report	T. Wehking	30. Apr
Schedule			95% complete																				
Resources																							
Goal																							
Task	Responsible	Due Date																					
Finalising and distribution the final report	T. Wehking	30. Apr																					

e-on		COC Project Status		Reporting Date Q1 2009	
1. Project data		5.1 Risks and Issues		5.2 Actions against risks	
Project Name	Gas Turbine Maintenance	1) Concern over the proper development of Frame Contracts from MU/BU's with no previous experience with this type of contract for a gas turbine. 2) Some necessary project inputs still outstanding from team members. 3) Expertise discrepancies within EON to properly manage gas turbine risk internally.		1) Meeting set up at EON UK for 28-29 May to educate working group members on Frame Contract structuring and management. 2) Information will be updated "face to face" from applicable parties at the May meeting in the UK. 3) All applicable agencies will have an "Expertise Development Plan" as part of the final report.	
Project Number	CoCf 2008-005				
Related KPIs	Availability, Controllable Costs				
Responsible Person	David Tummonds				
Project Phase	Development				
Start/End of Phase	May 2008 / July 2009				
Market Unit	CE ENO EUK EUS EIT EES ERP				
2. Project Rationale		6. Ongoing Key Actions			
Current reliance on Long Term Service Agreements (LTSA's) to manage the risk to our gas turbine fleet greatly limit its EON capability to become better informed and more capable operators of the assets. Additionally, the risk management provided by the OEM through LTSA's costs the company an estimated 28% premium (known from UK experience).		• Developing working group team meeting to review and better understand the structuring of Frame Contracts • Drafting of final report			
3. Project Goals		7. Deliverables during current reporting quarter			
• Long term increase in operational and maintenance expertise of EON personnel • 28% savings of all current LTSA costs through phased replacement with Frame Contracts at expiration (100M€ to 350M€) depending on LTSA cancellation options • Final report will clarify opportunity and roadmap transition from LTSA's to Frame Contracts within each MU/BU		• Draft of final report to all working group members for review and final comments			
4. Status		8. Future Actions (planned actions, not pending)			
	Development Phase	Implementation Phase	Overall project progress		
Schedule			70%		
Resources					
Goal					
				Task	Responsible
				Meeting in UK to answer all questions about structuring of Frame Contracts	Dave Tummonds
				Final outstanding project inputs due from team members	EKW, ERP, EIT
				Draft of final report to working group for comment	Dave Tummonds
				Final comments on draft report due from team	All Team Members
				Report completed and disseminated to GSCf	Dave Tummonds
				Due Date	
					28. Mai
					28. Mai
					30. Jun
					17. Jul
					31. Jul

e-on		COC Project Status		Reporting Date Q1 2009	
1. Project data		5.1 Risks and Issues		5.2 Actions against risks	
Project Name	Plant Risk Management & Investment Prioritisation (PRMIP)	• IS Implementation timescales and costs • EON Russia and EON US sign-on to project in 2009		• Working with EIS to accelerate the IS implementation options. Cost optimised options will be proposed to the GSC-f. • CoC-f working on resolving outstanding questions, GSC-f discussions continuing.	
Project Number	F2008-002				
Related KPIs	LTIF, Availability, UU, FAD				
Responsible Person	Mark Millward				
Project Phase	Implementation				
Start/End of Phase	Start Date - Jan 2009 / End Date - Dec 2009				
Market Unit	CE ENO EUK EUS EIT EES ERP				
2. Project Rationale		6. Ongoing Key Actions			
• To optimise the management of plant risks and the prioritisation of the project investments for all EON fossil plants		• Risk category banding setting and approval • Investment prioritisation method approval • Final pilot implementation report • IS Implementation strategy			
3. Project Goals		7. Deliverables during current reporting quarter			
• Consistent and systematic review of the plant risks and opportunities on all EON fossil plants, • Consistent ranking for all risks and opportunities • Mitigation strategies for the reduction of all non-acceptable risks, • Optimisation of project investment		• AERO workshop held in EON UK to improve knowledge of the process by all MU's, 16.01.09 • GSC-f agreed AERO Process to be the Minimum standard process for PRMIP, 05.02.09 • Pilot Implementation of ~10 projects reversed in to root risks entered in to PT Risk PC trial software, • Draft consolidate investment prioritisation method circulate to PRMIP team for comment, • PT Risk Enterprise version IS installation options being developed EON IS,			
4. Status		8. Future Actions (planned actions, not pending)			
	Development Phase	Implementation Phase	Overall project progress		
Schedule			50%		
Resources					
Goal					
				Task	Responsible
				Prepare and approve risk band setting for MU's	PRMIP team
				Comment of draft consolidated investment prioritisation	PRMIP team
				Complete IS installation options	EON IS
				Complete pilot implementation report and issue to GSC-f	CoC-f
				Due Date	
					15.05.2009
					01.05.2009
					15.05.2009
					15.05.2009

9. Appendix

EKW

Unit name		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)	CHP
Hard coal									
Datteln	1	Germany	1964	2012	95	32,1%	Mid load	100,0%	CHP
Datteln	2	Germany	1964	2012	95	32,1%	Mid load	100,0%	CHP
Datteln	3	Germany	1969	2012	113	36,9%	Mid load	100,0%	CHP
Heyden		Germany	1987	2031	875	40,8%	Mid load	100,0%	
Kiel		Germany	1970	2015	323	39,7%	Mid load	50,0%	CHP
Knepper	C	Germany	1971	2014	345	38,2%	Mid load	100,0%	CHP
Scholven	B	Germany	1968	2014	345	37,2%	Peaking	100,0%	CHP
Scholven	C	Germany	1969	2014	345	37,2%	Mid load	100,0%	CHP
Scholven	D	Germany	1970	2014	345	37,2%	Mid load	100,0%	CHP
Scholven	E	Germany	1971	2014	345	37,2%	Mid load	100,0%	CHP
Scholven	F	Germany	1979	2023	676	36,9%	Mid load	100,0%	CHP
Scholven	FWK	Germany	1985	2029	138	37,1%	Base Load	100,0%	CHP
Shamrock		Germany	1957	2012	132	n/a	Base Load	100,0%	CHP
Staudinger	1	Germany	1964	2012	249	38,9%	Mid load	100,0%	
Staudinger	3	Germany	1964	2012	293	38,1%	Mid load	100,0%	
Staudinger	5	Germany	1969	2036	510	42,0%	Mid load	100,0%	CHP
Wilhelmshaven		Germany	1976	2021	756	39,9%	Mid load	100,0%	
Sum hard coal					5980				
Lignite									
Buschhaus		Germany	1985	2017	352	36,1%	Base load	100,0%	
Schkopau	A	Germany	1996	2040	450	40,0%	Base Load	55,6%	CHP
Schkopau	B	Germany	1996	2040	450	40,0%	Base Load	55,6%	CHP
Sum lignite					1252				
Gas (steam/open cycle turb.)									
Franken	1	Germany	1973	2022	383	39,3%	Peaking	100,0%	
Franken	2	Germany	1996	2025	440	41,1%	Peaking	100,0%	
Huntorf	GT	Germany	1978	2027	321	65,1%	Peaking	100,0%	
Irsching	3	Germany	1974	2023	415	40,4%	Peaking	100,0%	
Staudinger	4	Germany	1973	2026	622	39,3%	Peaking	100,0%	
Sum gas (steam/open cycle turb.)					2181				
Oil (steam/open cycle turb.)									
Audorf	GT	Germany	1973	2027	87	29,1%	System support	100,0%	
Ingolstadt	3	Germany	1973	2022	386	39,7%	Peaking	100,0%	
Ingolstadt	4	Germany	1974	2023	386	39,7%	Peaking	100,0%	
Itzehoe	GT	Germany	1972	2028	88	29,1%	System support	100,0%	
Wilhelmshaven	GT	Germany	1983	2022	56	27,0%	System support	100,0%	
Sum oil (steam/open cycle turb.)					1003				
CCGT									
Kirchmöser		Germany	1994	2029	178	49,4%	Mid load	100,0%	
Sum CCGT					178				
Sum Net Generation Capacity (MW)					10594				
Power plants (not included in the E.ON Fossil KPI-Reporting; Capacity > 1 MW)									
Lignite									
Kassel		Germany	1988		33	n/a	Base load	50,0%	
Gas (steam/open cycle turb.)									
Pleinting	1	Germany	1968		292	40,6%	Peaking	100,0%	
Pleinting	2	Germany	1976		402	41,3%	Peaking	100,0%	
Power plants under construction									
Hard coal									
Datteln	4	Germany	2011		1100				
Staudinger	6	Germany	2013		1100				
Gas (steam/open cycle turb.)									
Irsching	4	Germany	2011		530				
Irsching	5	Germany	2009		845				
Plattling		Germany	2011		110			100,0%	
Degussa Antwerpen		Belgium	2010		32			50,0%	
Kiklareli		Turkey	2010		82			32,5%	

E.ON UK

Unit name		Country	In Service Date (year)	expected end of life (year)	Net Gene-ration Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)
Hard coal								
Ironbridge	1	UK	1970	2015	485	*	Base load	100,0%
Ironbridge	2	UK	1970	2015	485	*	Base load	100,0%
Kingsnorth	1	UK	1970	2013	485	*	Base load	100,0%
Kingsnorth	2	UK	1971	2013	485	*	Base load	100,0%
Kingsnorth	3	UK	1972	2013	485	*	Base load	100,0%
Kingsnorth	4	UK	1973	2013	485	*	Base load	100,0%
Ratcliffe-on-Soar	1	UK	1968	2030	500	*	Base load	100,0%
Ratcliffe-on-Soar	2	UK	1969	2030	500	*	Base load	100,0%
Ratcliffe-on-Soar	3	UK	1969	2030	500	*	Base load	100,0%
Ratcliffe-on-Soar	4	UK	1970	2030	500	*	Base load	100,0%
Sum hard coal					4910			
Oil (steam/open cycle turb.)								
Grain	1	UK	1982	2015	650	*	Peaking	100,0%
Grain	4	UK	1984	2015	650	*	Peaking	100,0%
Sum oil (steam/open cycle turb.)					1300			
CCGT								
Castleford		UK	2002	2022	50	*	Base load	100,0%
Connah's Quay	1	UK	1996	2036	345	55,9%	Base load	100,0%
Connah's Quay	2	UK	1996	2036	345	55,9%	Base load	100,0%
Connah's Quay	3	UK	1996	2036	345	55,9%	Base load	100,0%
Connah's Quay	4	UK	1996	2036	345	55,9%	Base load	100,0%
Corby		UK	1993	2034	336	*	Base load	50,0%
Cottam Dev. Centre		UK	1999	2039	390	*	Base load	100,0%
Enfield		UK	2002	2041	373	*	Base load	100,0%
Killingholme	1	UK	1992	2032	450	50,3%	Base load	100,0%
Killingholme	2	UK	1993	2032	450	50,3%	Base load	100,0%
Sandbach		UK	1999	2019	50	*	Base load	100,0%
Stoke		UK	2002	2022	56	*	Base load	100,0%
Taylors Lane	GT 2	UK	1981	2038	66	*	System Support	100,0%
Taylors Lane	GT 3	UK	1979	2038	66	*	System Support	100,0%
Thornhill		UK	1998	2038	50	*	Base load	100,0%
Sum CCGT					3717			
Sum Net Generation Capacity (MW)					9927			
Power plants (not included in the E.ON Fossil KPI-Reporting; Capacity > 1 MW)								
Gas fired								
Citigen	CHP	UK	1991	2016	31	*	CHP Contract	
Kemsley	CHP	UK	1995	2010	80	*	CHP Contract	
Bradford	CHP	UK	1995	2016	5	*	CHP Contract	
Leeds	CHP	UK	1995	2010	5	*	CHP Contract	
Workington	CHP	UK	1997	2012	49	*	CHP Contract	
Humber	CHP	UK	1997	2009	25	*	CHP Contract	
Nottingham	CHP	UK	1998	2013	5	*	CHP Contract	
Winnington	CHP	UK	2000	2020	130	*	CHP Contract	
Kemsley II	CHP	UK	2002	2019		*	CHP Contract	
Port of Liverpool	CHP	UK	2004	2024	30	*	CHP Contract	
Sum gas fired					359			
Power plants under construction								
Gas (steam/open cycle turb.)								
Grain		UK	2010		1275			

* in accumulation process

E.ON US

Unit name		Country	In Service Date (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)
Hard coal							
Brown	1	USA	1957	102		Mid load	100,0%
Brown	2	USA	1963	169		Mid load	100,0%
Brown	3	USA	1971	433		Mid load	100,0%
Cane Run	4	USA	1962	155		Mid load	100,0%
Cane Run	5	USA	1966	168		Mid load	100,0%
Cane Run	6	USA	1969	240	49,0%	Mid load	100,0%
Ghent	1	USA	1974	468		Base Load	100,0%
Ghent	2	USA	1977	466		Mid load	100,0%
Ghent	3	USA	1981	482		Mid load	100,0%
Ghent	4	USA	1984	495	46,7%	Mid load	100,0%
Green River	3	USA	1954	71		Mid load	100,0%
Green River	4	USA	1959	102	51,6%	Mid load	100,0%
Mill Creek	1	USA	1972	303	40,6%	Mid load	100,0%
Mill Creek	2	USA	1974	299		Mid load	100,0%
Mill Creek	3	USA	1978	397		Mid load	100,0%
Mill Creek	4	USA	1982	492	40,6%	Base Load	100,0%
Trimble County	1	USA	1990	515	-	Base load	75,0%
Tyrone	3	USA	1953	73	93,7%	Mid load	100,0%
Sum hard coal				5430			
Gas (steam/open cycle turb.)							
Brown	5	USA	2001	143		Peaking	100,0%
Brown	6	USA	1999	168		Peaking	100,0%
Brown	7	USA	1999	168		Peaking	100,0%
Brown	8	USA	1995	140		Peaking	100,0%
Brown	9	USA	1994	140		Peaking	100,0%
Brown	10	USA	1995	140		Peaking	100,0%
Brown	11	USA	1996	140	27,9%	Peaking	100,0%
Paddys Run	13	USA	2001	175	50,4%	Peaking	100,0%
Trimble County	5	USA	2002	180		Peaking	100,0%
Trimble County	6	USA	2002	180		Peaking	100,0%
Trimble County	7	USA	2004	180		Peaking	100,0%
Trimble County	8	USA	2004	180		Peaking	100,0%
Trimble County	9	USA	2004	180		Peaking	100,0%
Trimble County	10	USA	2004	180	75,6%	Peaking	100,0%
Sum gas (steam/open cycle turb.)				2294			
Sum Net Generation Capacity (MW)				7724			
Power plants under construction							
hard coal							
Trimble county	2	US	2010	750			

* Recalculation of Designed heat rate in process

EBX

Unit name		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)	CHP
Hard coal									
Maasvlakte	1	NL	1988	2022	531	40,6%	Base load	100,0%	-
Maasvlakte	2	NL	1987	2023	531	40,6%	Base load	100,0%	-
Sum hard coal					1063				
Gas (steam/open cycle turb.)									
Delft	GTCD	NL	1974	2016	93	27,9%	Peaking	100,0%	-
RoCa	1	NL	1982	2020	24	89,7%	Peaking	100,0%	CHP
RoCa	2	NL	1982	2020	25	89,7%	Peaking	100,0%	CHP
UCML Maasvlakte	GT	NL	2004	2019	70	75,6%	Base load	100,0%	CHP
Sum gas (steam/open cycle turb.)					212				
CCGT									
Den Haag	GV15	NL	1983	2023	100	49,0%	Mid load	100,0%	CHP
Galileistraat	FG1	NL	1988	2012	209	46,7%	Base load	100,0%	CHP
Leiden	LD12	NL	1986	2020	83	51,6%	Mid load	100,0%	CHP
RoCa	3	NL	1996	2021	220	50,4%	Base load	100,0%	CHP
Sum CCGT					612				
UCML Maasvlakte	STT	NL	2004	-	0	-	Base load	100,0%	
Sum Net Generation Capacity (MW)					1886				
Power plants (not included in the E.ON Fossil KPI-Reporting; Capacity > 1 MW)									
Hard coal									
Unicorn Power	UNC	NL	1997	2013	6	93,7%	38,8%		CHP
Power plants under construction									
Hard coal									
Maasvlakte	3		2013		1070		NL		

E.ON Nordic

		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)
Oil (steam/open cycle turb.)								
Barsebäck	G13	Sweden	1973	2020	42	25,0%	System support	100,0%
Barsebäck	G14	Sweden	1973	2020	42	25,0%	System support	100,0%
Bravalla		Sweden	1972	2020	240	40,0%	System support	100,0%
Karlshamn	1	Sweden	1969	2025	336	43,0%	System support	70,0%
Karlshamn	2	Sweden	1971	2030	336	43,0%	System support	70,0%
Karlshamn	3	Sweden	1973	2040	332	41,0%	Peaking	70,0%
Karlshamn	G13	Sweden	1970	2020	37	25,0%	System support	100,0%
Halmstad	G11	Sweden	1973	2020	78	27,0%	System support	100,0%
Halmstad	G12	Sweden	1973	2030	172	35,0%	System support	100,0%
Öresundsverket	G24	Sweden	1972	2025	63	25,0%	System support	100,0%
Öresundsverket	G25	Sweden	1973	2025	63	25,0%	System support	100,0%
Sum oil (steam/open cycle turb.)					1741			
Sum Net Generation Capacity (MW)					1741			
Power plants (not included in the E.ON Fossil KPI-Reporting; Capacity > 1 MW)								
Gas (steam/open cycle turb.)								
Malmö Heleneholm	G11,G12	Sweden	1964	2010	130	*	System support	100,0%
Power plants under construction								
CCGT								
Öresundsverket CHP	G1/G2	Sweden	august 2009		450	**		
* CHP only, heat rate not applicable								
** CHP and can operate as non CHP								

E.ON Russia

Unit name		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)	CHP
Lignite									
Berezovskaya GRES	1	Russia	1987	2037	706	38,6%	Base load	76,1%	CHP
Berezovskaya GRES	2	Russia	1991	2041	706	38,6%	Base load	76,1%	CHP
Sum Lignite					1412				
Gas (steam/open cycle turb.)									
Surgutskaya GRES-2	1	Russia	1985	2035	780	38,8%	Base load	76,1%	CHP
Surgutskaya GRES-2	2	Russia	1985	2035	780	38,8%	Base load	76,1%	CHP
Surgutskaya GRES-2	3	Russia	1986	2036	780	38,8%	Base load	76,1%	CHP
Surgutskaya GRES-2	4	Russia	1987	2037	780	38,8%	Base load	76,1%	CHP
Surgutskaya GRES-2	5	Russia	1987	2037	780	38,8%	Base load	76,1%	CHP
Surgutskaya GRES-2	6	Russia	1988	2038	780	38,8%	Base load	76,1%	CHP
Shaturskaya GRES	1	Russia	1971	2021	186	33,0%	Peaking	76,1%	CHP
Shaturskaya GRES	2	Russia	1972	2022	186	33,0%	Peaking	76,1%	CHP
Shaturskaya GRES	3	Russia	1972	2022	186	33,0%	Peaking	76,1%	CHP
Shaturskaya GRES	4	Russia	1978	2028	195	34,4%	Peaking	76,1%	CHP
Shaturskaya GRES	5	Russia	1978	2028	195	34,4%	Peaking	76,1%	CHP
Shaturskaya GRES	6	Russia	1986	2036	74	32,9%	Peaking	76,1%	CHP
Smolenskaya GRES	1 AB	Russia	1978	2028	194	35,3%	Peaking	76,1%	CHP
Smolenskaya GRES	2 AB	Russia	1979	2029	194	35,3%	Peaking	76,1%	CHP
Smolenskaya GRES	3 AB	Russia	1985	2035	194	35,3%	Peaking	76,1%	CHP
Yaivinskaya GRES	1	Russia	1963	2018	142	36,1%	Base load	76,1%	CHP
Yaivinskaya GRES	2	Russia	1964	2019	142	36,1%	Base load	76,1%	CHP
Yaivinskaya GRES	3	Russia	1964	2019	142	36,1%	Base load	76,1%	CHP
Yaivinskaya GRES	4	Russia	1965	2020	142	36,1%	Base load	76,1%	CHP
Sum gas (steam/open cycle turb.)					6852				
Sum Net Generation Capacity (MW)					8264				
Power plants under construction									
Lignite									
Berezovskaya GRES	3	Russia	2012		760				
CCGT									
Surgutskaya GRES-2	7	Russia	2010		370				
Surgutskaya GRES-2	8	Russia	2010		370				
Shaturskaya GRES	7	Russia	2010		376				
Yaivinskaya GRES	5	Russia	2011		390				

E.ON France

Unit name		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)	CHP?
Hard coal									
Emil Huchet	4	France	1959_1990	2013	115	*	Base Load	65,0%	-
Emil Huchet	5	France	1973	2013	330	*	Mid load	65,0%	-
Emil Huchet	6	France	1981	2025	600	*	Mid load	65,0%	-
Provence	4	France	1967	2013	210	*	Base load	65,0%	-
Provence	5	France	1984	2025	595	*	Mid load	65,0%	-
Hornaing	3	France	1970	2013	240	*	Mid load	65,0%	-
Lucy	3	France	1971	2013	245	*	Mid load	65,0%	-
Sum hard coal					2335				
Sum Net Generation Capacity (MW)					2335				
Power plants under construction									
CCGT									
Emile Huchet	7	France	2010		430				
Emile Huchet	8	France	2010		430				

* in accumulation process

E.ON Italy

Unit name		Country	In Service Date (year)	Expected end of life (year)	Net Generation Capacity (MW)	Designed heat rate (%)	Duty Type	Percentage of ownership (%)	CHP?
Hard coal									
Fiumesanto	FS3	Italy	1996	2032	299	34,0%	Base load	80,0%	-
Fiumesanto	FS4	Italy	1996	2031	299	34,0%	Base load	80,0%	-
Sum hard coal					599				
Gas (steam/open cycle turb.)									
Fiumesanto	FS5 tg 1	Italy	2005	2030	40	30,0%	Peaking	80,0%	-
Fiumesanto	FS6 tg 2	Italy	2005	2030	38	30,0%	Peaking	80,0%	-
Ostiglia	OS4	Italy	1974	2010	313	37,0%	Peaking	80,0%	-
Tavazzano	TZ7	Italy	1993	2011	300	39,5%	Peaking	80,0%	-
Tavazzano	TZ8	Italy	1993	2016	300	39,5%	Peaking	80,0%	-
Trapani	TT1	Italy	1988	2016	84	29,7%	Peaking	80,0%	-
Trapani	TT2	Italy	1988	2016	84	29,7%	Peaking	80,0%	-
Sum gas (steam/open cycle turb.)					1159				
Oil (steam/open cycle turb.)									
Fiumesanto	FS1	Italy	1983	2013	152	45,5%	Mid load	80,0%	-
Fiumesanto	FS2	Italy	1984	2013	152	45,5%	Mid load	80,0%	-
Sum oil (steam/open cycle turb.)					305				
CCGT									
Ostiglia	OS1	Italy	2004	2033	379	54,0%	Mid load	80,0%	-
Ostiglia	OS2	Italy	2004	2033	379	54,0%	Mid load	80,0%	-
Ostiglia	OS3	Italy	2005	2034	379	54,0%	Mid load	80,0%	-
Tavazzano	TZ5	Italy	2004	2034	759	55,1%	Mid load	80,0%	-
Tavazzano	TZ6	Italy	2005	2035	381	55,1%	Mid load	80,0%	-
Livorno Ferraris	LF1	Italy	2008	2038	800	56,0%	Mid load	75,0%	
Sum CCGT					3077				
Sum Net Generation Capacity (MW)					5139				
Power plants under construction									
CCGT									
Scandale	1	Italy	2010		400			50,0%	
Scandale	2	Italy	2010		400			50,0%	

E.ON Spain

Unit name	Country	In Service Date (year)	Expected end of life (year)	Net Gene-ration Capacity (MW)	designed heat rate (%)	Duty Type	Percentage of ownership (%)
Hard coal							
Los Barrios	Spain	1985	2030	545	**	Mid load	100,0%
Puente Nuevo	Spain	1981	2033	299	**	Base load	100,0%
Puertollano	Spain	1972	2012-2013	203	32.5%*	System support	100,0%
Sum hard coal				1047			
Lignite							
Cercs	Spain	1971	2011-2012	145	32%*	Peaking	100,0%
Escucha	Spain	1970	2011-2012	142	30.8%*	Mid load	100,0%
Sum Lignite				287			
CCGT							
Escatron	Spain	2008	2033	804	55.4%*	Mid load	100,0%
Tarragona	Spain	2002	2033	386	53.1%*	System support	100,0%
Sum CCGT				1190			
Sum Net Generation Capacity (MW)				2525			
Power plants under construction							
CCGT							
CCGT ALGECIRAS	I	Spain	Q3 2010	800			
CCGT SOLVAY	I	Spain	2012	400-500			

* standard heat rate

** has to be modified (boiler and turbine modification)

Further plants in CE		Country	Business Unit	In Service Date (year)	Power (MW net.)	E.ON share (%)	E.ON share (MW net.)
Lignite							
České Budějovice		Czech Republic	ECH	1990	66	18,0	11,9
Otrokovice		Czech Republic	ECH	1976	50	66,0	33,0
Ško-energo		Czech Republic	ECH	1990	88	21,0	18,5
Strakonice		Czech Republic	ECH	1990	30	3,0	0,9
Tábor		Czech Republic	ECH	1990	9	51,0	4,6
Hard Coal							
Wolfsburg West		Germany	EKW		300		0,0
Bialystok		Poland	EFR	1973/91	167	69,6	116,2
Gas							
Salzwedel		Germany	EAV		10,2	65,0	6,7
Obemburg		Germany	EBY	1995	64	50,0	32,0
BMW Dingolfing (CHP)		Germany	EBY	1998	15,3	75,0	11,5
Meggler (CHP)		Germany	EBY	2000	15	100,0	15,0
PKG Peißenberg (CHP)		Germany	EBY	1982	12	50,0	6,0
Hammelburg (CHP)		Germany	EBY	1994	10,5	100,0	10,5
Burghausen		Germany	EEP	2001	120	100,0	120,0
Grenzach-Wyhlen		Germany	EEP	2004	40	69,9	28,0
Gendorf		Germany	EEP	2002	41	50,0	20,5
139 Motoren BHKW		Germany	EHA		60,0		0,0
GT Teppichfabrik Gestach		Germany	EHA	1998	5,2	24,7	1,3
HKW Neumünster		Germany	EHA	1971/2005	89,0	18,4	16,4
E.ON Mitte Wärme (1 GT + 3 BHKW)		Germany	EMI		22,6	73,3	16,6
HKW Uni. Göttingen		Germany	EMI	1996	21,900	100,0	21,9
Bad Salzungen		Germany	ETE	1993	10	76,8	7,7
Eisenach		Germany	ETE	1993	22	38,0	8,4
Erfurt		Germany	ETE	2000	80	27,8	22,2
Jena-Süd		Germany	ETE	1996	199	62,6	124,6
Schwarza		Germany	ETE		30	57,0	17,1
Iderhoffstr.		Germany	ETE		12,0	34,2	4,1
BHKW Mitte, Ost und Nord		Germany	ETE		9,1	34,0	3,1
Bohrhügel		Germany	ETE		9,0	34,1	3,1
Eisenach		Germany	ETE		22,0	38,4	8,4
Kirchlengern GT 1+2		Germany	EWA	1980	200	62,9	125,8
HKW Minden-Nord		Germany	EWA	1995	6,755	100	6,8
Debrecen (DE)		Hungary	EHU	1996	7,10	100,0	7,1
Debrecen (DGE)		Hungary	EHU	2004	12,00	100,0	12,0
DKCE (Debrecen)		Hungary	EHU	1990	95,00	100,0	95,0
Győr		Hungary	EHU	1963/2003	8,90	100,0	8,9
Nyíregyháza		Hungary	EHU	1973/1998	19,70	100,0	19,7
NYKCE (Nyíregyháza)		Hungary	EHU	2007	47,30	100,0	47,3
Sopron (SE)		Hungary	EHU	1964/2004	14,80	100,0	14,8
Szombathely		Hungary	EHU	2003	7,10	55,0	3,9
Veszprém		Hungary	EHU	2002	8,10	80,0	6,5
Kyjov		Czech Republic	ECH	1990	23	67,0	15,4
Kirklareli		Turkey	EFR	2005	82	32,5	26,7
Oil							
Hausham GT 1		Germany	EBY	1982	25	100,0	25,0
Hausham GT 2		Germany	EBY	1982	25	100,0	25,0
Hausham GT 3		Germany	EBY	1982	25	100,0	25,0
Hausham GT 4		Germany	EBY	1982	25	100,0	25,0

Definitions / Equations

LTIF	Lost time injury frequency:	$\frac{\text{Lost Time Injuries} * 1\,000\,000}{\text{Time Total Actual hours worked}}$
TRIF	Total recordable incidents frequency:	$\frac{\text{Total Recordable Incidents} * 1\,000\,000}{\text{Time Total Actual hours worked}}$

Lost time injuries = Injuries that cause any loss of period of a full day or shift from work

Total Recordable Incidents = Restricted Work Cases + Medical Aid + Fatalities + LTIs

Unplanned Unavailability	$\frac{\text{Net MWh unplanned unavailable [MWh]}}{\text{Net MWh for period [MWh]}}$
Availability	$\frac{\text{Net generation volume [MWh]} + \text{MWh available on standby [MWh]} + \text{MWh not running due to external influence [MWh]}}{\text{Net MWh for period [MWh]}}$

The availability figures were calculated as follows:

Net generation volume (output)	Total net generation output; Generation at Grid Point Entry; Available and ran
MWh available on standby	Available, but did not clear the market / not dispatched
Net MWh Planned Unavailable	Planned outages, budgeted outages; announced in the previous year
Net MWh Unplanned unavailable	Outage not planned/not in the budget; includes reduction in capacity
MWh not running due to external influence	Available and cleared market, but did not run due to external influences beyond the plant's control (e.g. transmission grid issues, re-dispatch etc.)
Net MWh for period	Complete availability (sum of the positions above)

Financial Availability Deviation (FAD)	$\text{"Generation EBIT" (Forecast)} - \text{"Generation EBIT" (Budget)}$
Financial Availability Deviation Ratio	$\frac{\text{"Generation EBIT" (Forecast)} - \text{"Generation EBIT" (Budget)}}{\text{"Generation EBIT" (Budget)}}$
"Generation EBIT"	Revenues (=capacity fee, based on EET contract or similar) – Controllable Costs Fossil (=O&M costs + local administrative costs)

Causes for Unplanned Unavailability**Fossil Steam Units:**

Fuel handling	Coal Handling Equipment up through Bunkers
Fuel Firing	Boiler Fuel Supply from Bunkers to Boiler - Pulverizers, Primary Air Fans, and Associated Ducts, Burners, Cyclone, Oil and Gas Systems
Boiler	Boiler Piping System, Boiler Internals and Structures, Slag and Ash Removal, Boiler Tube Fireside Slagging or Fouling, Boiler Air and Gas Systems, Boiler Control Systems, Boiler Overhaul and Inspections, Boiler Water Condition, Boiler Design Limitations, Miscellaneous (Boiler)
Boiler Tube Leaks	
Balance of plant	Condensing System, Circulating Water Systems, Waste Water (zero discharge), Condensate System, Feedwater System, Heater Drain Systems, Extraction Steam, Auxiliary Systems, Miscellaneous (Balance of Plant)
Steam Turbine	High Pressure Turbine, Intermediate Pressure Turbine, Low Pressure Turbine, Valves, Piping, Lube Oil, Controls, Miscellaneous (Steam Turbine)
Generator	Generator, Exciter, Cooling System, Controls, Miscellaneous (Generator)
Pollution Control Equipment	Wet Scrubbers, Dry Scrubbers, Precipitators, Miscellaneous (Pollution Control Equipment), Continued Emissions Monitoring Systems (CEMS), NOx Reduction Systems, CO Reduction
Transformers/Switchgear	

Gas Turbine Units:

Balance of plant	Electrical, Auxiliary Systems, Miscellaneous (Balance of Plant)
Generator	Generator, Exciter, Cooling System, Controls, Miscellaneous (Generator)
Gas Turbine	Inlet Air System and Compressors, Fuel, Ignition and Combustion Systems, Turbine, Exhaust Systems, Auxiliary Systems, Miscellaneous (Gas Turbine)
Expander Turbine	
Other	

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