project overview 1/5



power plants (lignite)

power plants (lignite)

year of commissioning, phase and probability of realization* output

Profen (Mibrag)

in planning Process of approval is underway (19. April 2012) // process of changing the regional plan started 2013 // first permissions are expected until the end of 2014 // project has been put on hold due to uncertain economical and political conditions // planned start of construction was 2015 // still lack of investors

Niederaußem BoA 4/BoAplus, Bergheim (RWE)

1100 MW open in planning

2020

On 7. October 2011 RWE Power submitted a proposal to the Cologne district government to change the regional plan // District government changed the regional plan 2013 // City of Bergheim changed the land use plan in the end of 2014 // First Scoping in Sep 2015 // Total Investment 1,5 Mrd. Euro // final decision depends on legal certainty and economical conditions

Lausitz (Vattenfall)

2000 MW open

660 MW

in planning



Will replace an old 535 MW unit // Commissioning date likely to be from 2025 // Total Investment 2,0 Mrd. Euro // Decision not before 2018



power plants (hard coal)

power plants (hard coal)

output

year of commissioning, phase and probability of realization*

Westfalen Block D and Block E, Hamm-Uentrop

800 MW 800 MW

aborted 2014 in operation



Increase of costs and delays caused great displeasure and the exit of all partners by the end of 2015 // Block E which started commercial operation in July 2014 will be operated by RWE alone // Block D has been aborted due to costly technical problems, delays and uneconomicalness

Moorburg 1 and Moorburg 2, Hamburg (Vattenfall)

820 MW 820 MW

2015 2015

in operation in operation



Technical problems caused delays // procedure of licensing the planned district heating network not completed yet // an alternative and likely scenario to the extension of the district heating network is a further CCPP north of the river Elbe // Block B started commercial operation in March 2015, Block A in August September 2015

Mannheim Block 9, Mannheim-Neckarau (GKM)

911 MW

2015

in operation



Technical problems caused huge delays // Environmental group BUND takes legal action against the environmental approval // commercial operaion since May 2015

Wilhelmshaven (GDF SUEZ / BKW FMB)

800 MW

2015

in operation

Technical problems caused delays (esp. T24 steel) // commercial operation started at the end of October 2015

Datteln Block 4 (Uniper)

1100 MW

2018

under constr.

Permissions are granted (Jan. 2017) // Plan revision procedures encounter heavy resistance and the outcome still remains uncertain // in view of the Trianel-ruling the city of Datteln remains optimistic // decision for Plan revision procedures in December 2013 // according to Uniper commercial operation until 1st half of 2018

probability of realization (best guess)

= unlikely

= possibly

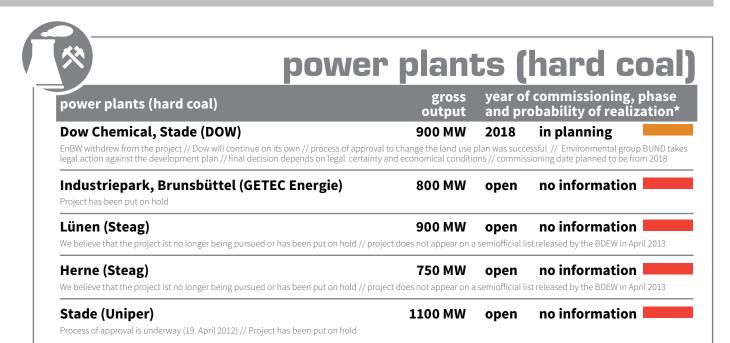
= probably

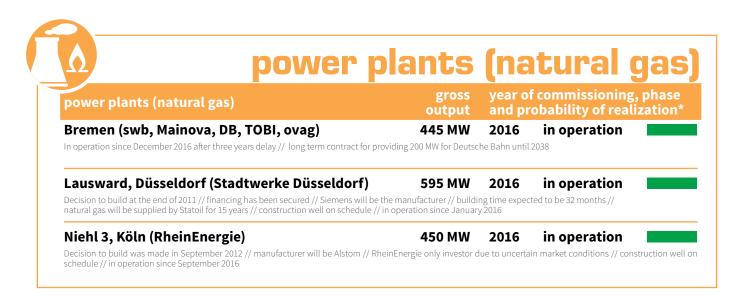


project overview 2/5

>> new fossil power plants in Germany >100MW

last update: February 1, 2017





probability of realization (best guess) = possibly = probably = for sure

project overview 3/5



power plants (natural

power plants (natural gas)

output

year of commissioning, phase and probability of realization*

HKW Haferweg, Hamburg (Vattenfall)

150 MW

2016

under constr.

Heatplant // construction well on schedule // commissioning date planned to be from Winter 2016 / 2017

HKW Lichterfelde, Berlin (Vattenfall)

300 MW

2017

under constr.

Heatplant // Permissions are granted // manufacturer will be Iberdrola // GE will deliver gas-turbine // construction will begin in 2014 // commissioning date delayed by

Kiel (Stadtwerke Kiel)

200 MW

2018

under constr.

Replacement of an old coal fired power plant // 20 gas-fired engines à 10 MW // final investment decision was made in Nov. 2016 // Kraftanlagen München and GE will be manufacturers // Total Investment 290 Mio. €

Stuttgart (EnBW)

one year to winter 2017/2018

210 MW

2018

in planning

Heatplant // decision to build was made in Dec. 2016 // Total Investment 75 Mio. Euro // Permissions are expected for the beginning of 2017 // commissioning date planned to be end of 2018/ beginning of 2019

Chemiepark Leverkusen (Steag)

570 MW

2018

in planning

Process of approval is underway (19. April 2012) // Total Investment 350 Mio. Euro // GE and Iberdrola will be manufacturers // delays due to uncertain economical and political conditions // beginning of construction was planned to start from the end of 2013 // Repower withdrew from the project and sold it to Steag in May 2015 // building time expected to be 30 months // final investment decision not made yet

BHKW Mainz (KWM)

230 MW

2018

in planning



Heatplant // 10 gas-fired engines à 10 MW // Total Investment 100 Mio. Euro // Permissions are granted // final decision was made in Dec. 2016 // Wärtsilä Energy Solutions will be manufacturer // commissioning date planned to be winter 2018

HKW Marzahn, Berlin (Vattenfall)

260 MW

2020

in planning

Heatplant // Siemens will be prime contractor // final decision expected in 2016 // commissioning date planned to be 2020

Haiming, Burghausen (formerly OMV)

800 MW

for sale

Permissions are granted // OMV withdrew from the project and tries to find a new investor // project development goes on until final permission to buils

Schweinfurt (PQ Energy/ Blackstone)

800 MW

aborted

Peak and backup power plant // Process of approval is not underway yet // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Total investment 400 Mio. Euro // output from 800-1040 MW // location already secured // Output from 800-1040 MW //aborted

Leipheim (Stadtwerke Ulm/Neu-Ulm)

600 MW

2019

in planning

A referendum decided to build a new power plant // no final decision yet // project comes in two phases: 1st phase: gas turbine, 2nd phase: steam turbine // Siemens new cooperation partner // commissioning date (phase 1) planned to be from 2019

Wedel (Vattenfall)

300 MW

open



"Innovative" power plant with thermal store // replacement of an old power plant in Hamburg Wedel and an alternative to the planned extension of the district heating network as part of the new power plant in Moorburg // perfomance audit not finished yet // retrofitting and the extension of operation of an old coal-fired plant meanwhile decided // Since Dec. 2016 Vattenfall favours a decentralized and modular approach for strengthening the heating system - which makes a new large plant unnecessary

probability of realization (best guess)

= unlikely

= possibly

= probably

= for sure

project overview 4/5

>> new fossil power plants in Germany >100MW

last update: February 1, 2017



power plants (natural gas)

power plants (natural gas)

output

year of commissioning, phase and probability of realization*

Gersteinwerk, Werne (RWE)

1300 MW

2018

no information

Process of approval is underway // location already secured // final decision depends on economic conditions

Griesheim (PQ Energy/ Blackstone)

500 MW

2019 no info

no information

Peak and backup power plant // Process of approval is not underway yet // Total investment 250 Mio. Euro // Scoping Jan 2013 // final decision depends on economic conditions

HKW Klingenberg, Berlin (Vattenfall)

300 MW

2020

in planning

Heatplant // Process of approval is underway (19. April 2012) // final decision depends on legal certainty and economical conditions // commissioning date planned to be from 2020

Chemiepark Uerdingen, Krefeld (Trianel / Currenta und Partner)

1200 MW

2020

in planning

Investment decision depends on regulation, capacity markets and economic conditions // beginning of construction deleayed for three years // about 50 investors expressed their interest to have a share in the plant // commissioning date planned to be from 2019/2020

Gundelfingen (PQ Energy/ Blackstone)

1200 MW

open

no information

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 $Peak \ and \ backup \ power \ plant \ // \ Process \ of \ approval \ is \ not \ underway \ yet \ // \ location \ already \ secured \ // \ cooperation \ with \ RWE \ possible \ // \ final \ decision \ depends \ on \ economic \ conditions$

Oberrhein, Karlsruhe (MiRO und Trianel)

1200 MW

open

in planning

ined to h

Joint Power plant // could be a replacement of an old nucelar power plant (Philippsburg 2) // Process of approval not before 2015 // commissioning date planned to be after 2020

Grundremmingen (RWE)

offen

open

no information

Possible replacement for an old nuclear power plant at the same location // Process of approval started at the end of 2014 // RWE wants to keep an option for this locaion // there is no schedule yet

Mecklar-Marbach, Ludwigsau (Dong Energy)

1100 MW

open

for sale

Process of approval is underway (19. April 2012) // Iberdrola withdrew from the project and sold it to Dong Energy // Meanwhile Dong Energy also withdrew from the project and is trying to sell it

Duisburg-Wanheim (Stadtwerke Duisburg)

600 MW

open

on hold

Joint Power plant // replacement of an old coal fired power plant of Steag in Duisburg Walsum // decision has been postponed due to uncertain economical conditions

Chempark Marl (Infracor)

600 MW

open

no information

Planning concept on the way from 2013 says the city of Marl // type of fuel unknown but probably not coal // many questions remain to be answered // no decision yet

Weiher, Quierschied (Steag)

500 MW

open

no information

Permissions are granted // replacement of an old coal fired power plant // gas-pipeline is currently being installed // no decision yet

Herne (Steag)

offen

open

no information

Process of approval for a gas pipeline is underway // Steag wants to keep an option for this locaion

probability of realization (best guess)

= unlikely

= possibly

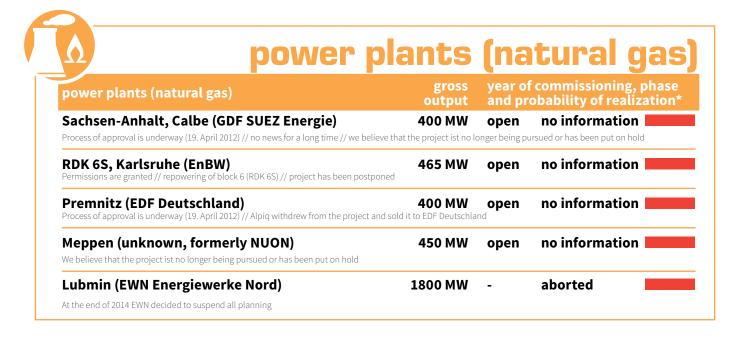
= probably

= for sure

project overview 5/5

>> new fossil power plants in Germany >100MW

last update: February 1, 2017



probability of realization (best guess)

= unlikely

= possibly

= probably

= for sure

Note

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KW Walsum 10, KW Lünen, KW Dow Stade, KW Hüerth Knapsack 2, KW Boxberg R, Neurath BoA 2 and 3, KW Lingen, HKW Hannover, GuD Irsching 4 and RDK 8 have been removed because they went into operation.



power plants overview

>> new fossil power plants in Germany >100MW

last update: February 1, 2017



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 $Some projects \ do \ not \ appear \ on \ this \ map \ either \ because \ we \ think \ they \ have \ a \ probability \ of \ realization \ below \ 10\% \ or \ because \ they \ have \ been \ cancelled.$