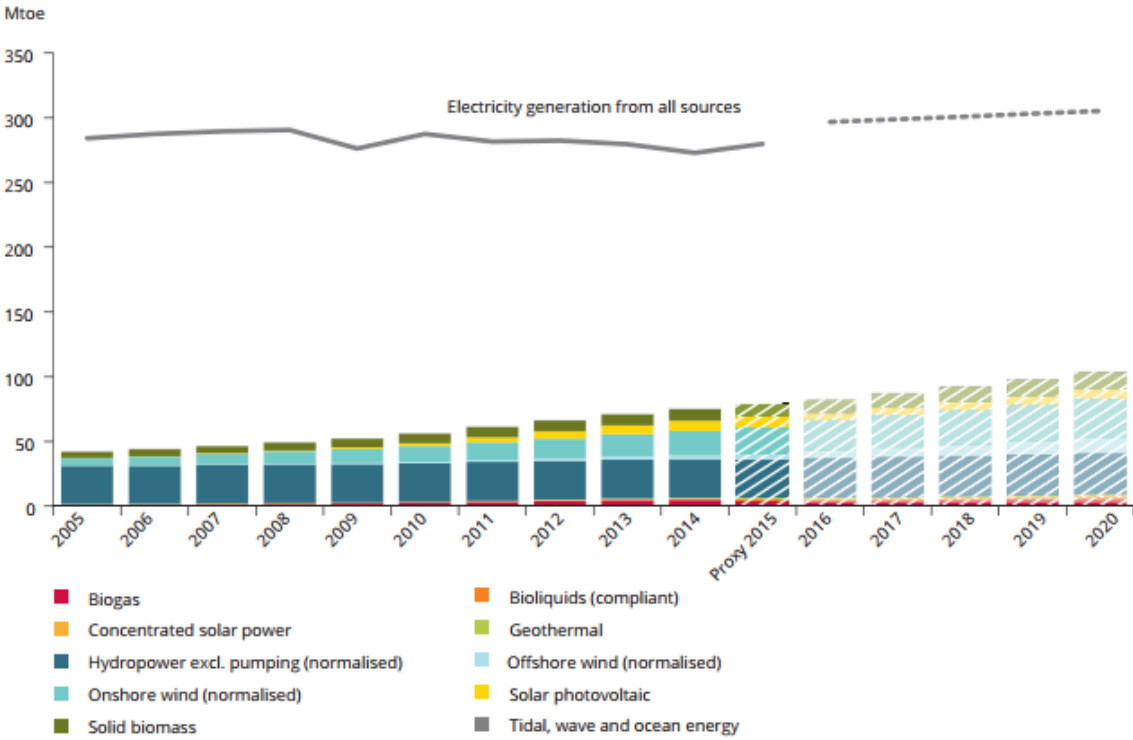
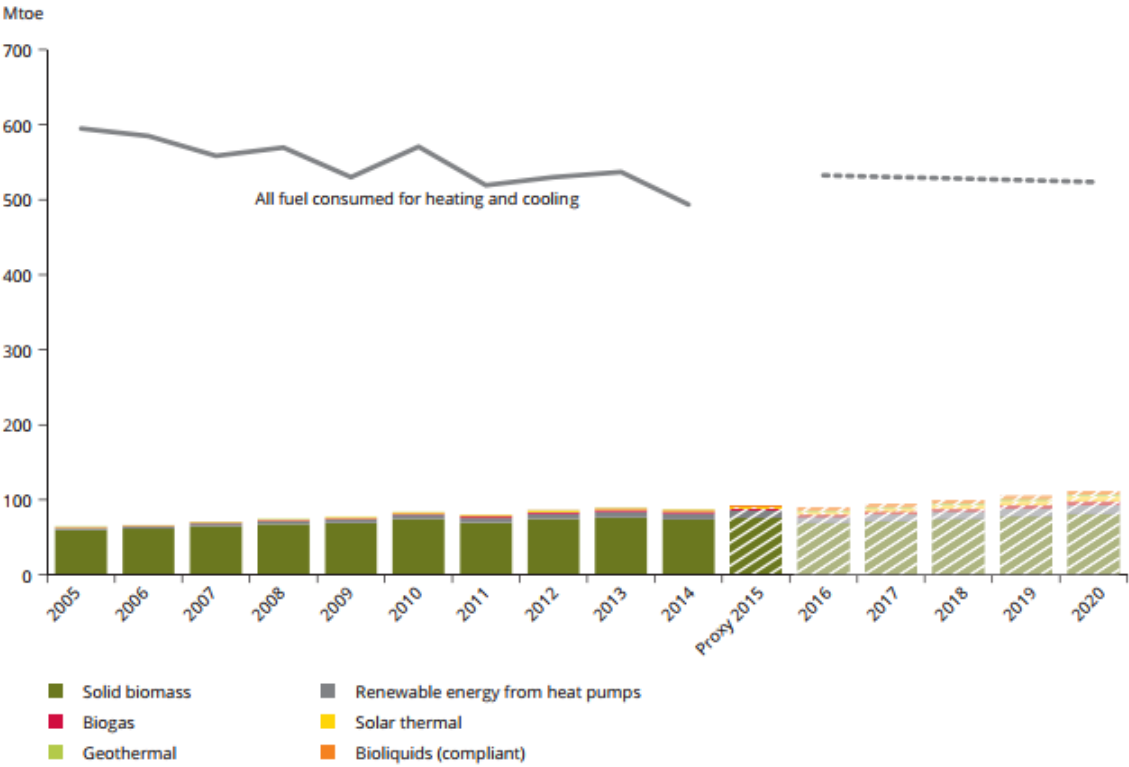


**Annex 1: Renewable energy source electricity generation evolution in the EU-28**



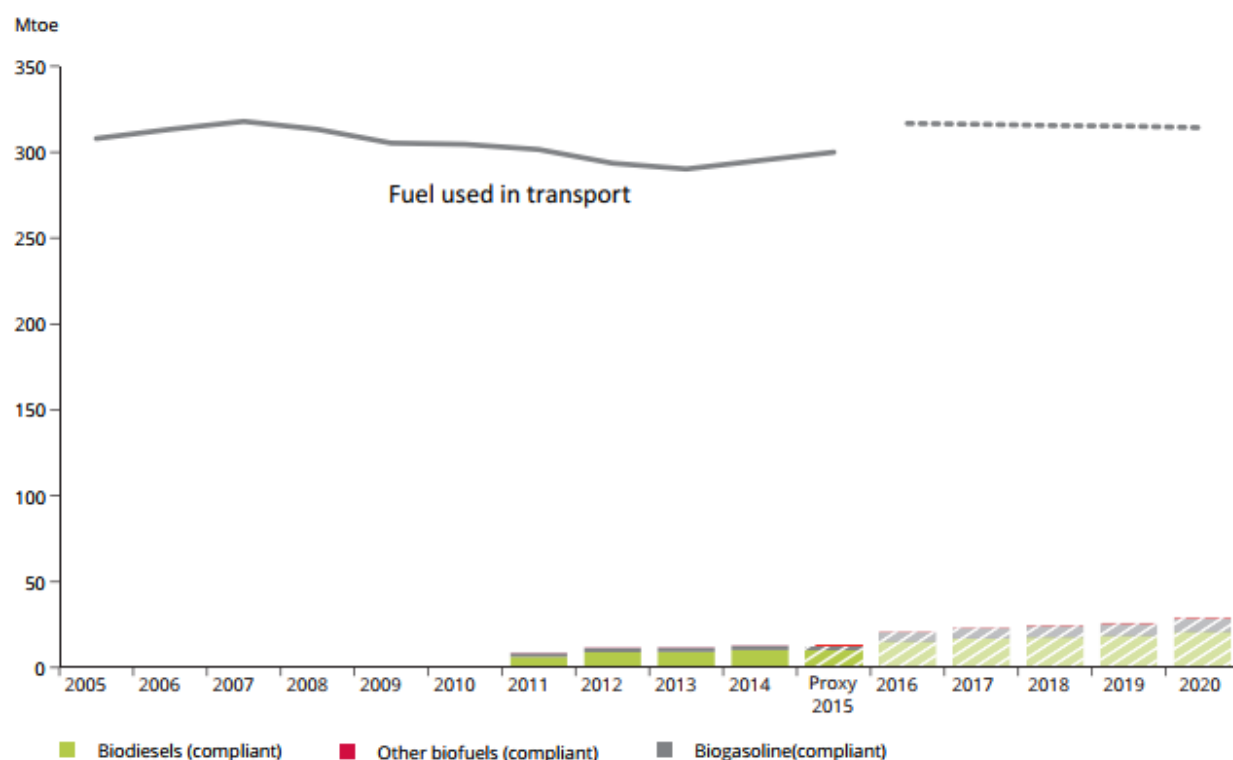
Source: EEA (2017), Renewable Energy in Europe 2017 Recent growth and knock-on effects, p. 15

**Annex 2: Renewable energy source generation evolution for heating and cooling in the EU-28**



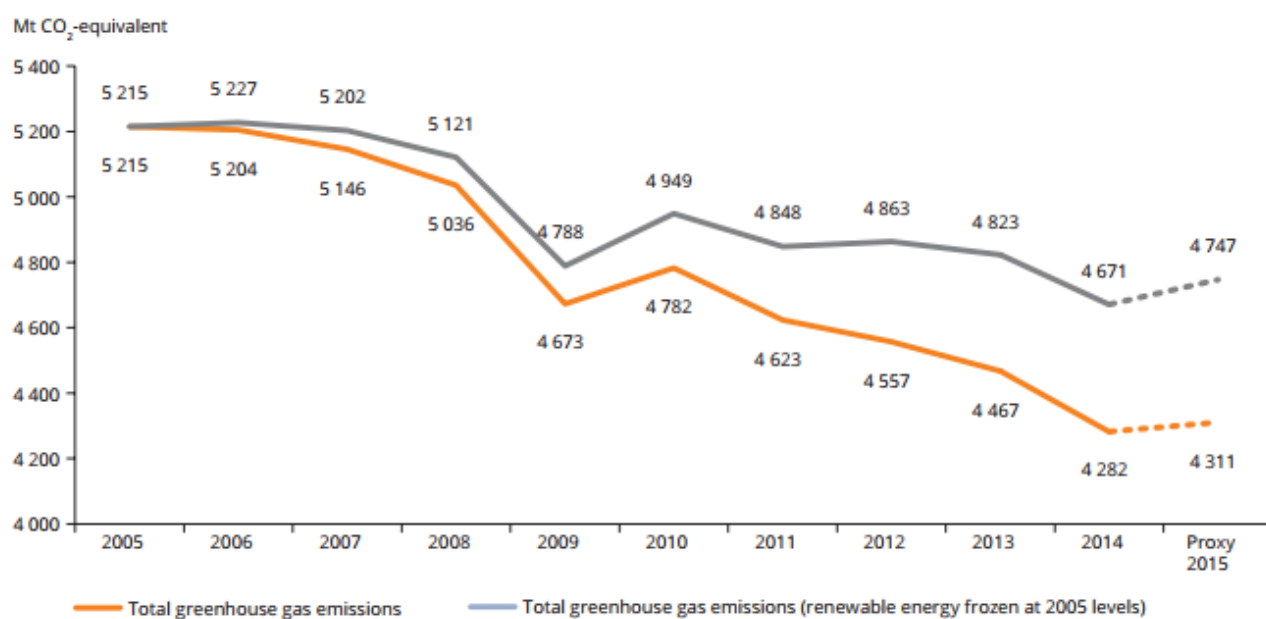
Source: EEA (2017), Renewable Energy in Europe 2017 Recent growth and knock-on effects, p. 23

**Annex 3: Renewable energy source generation evolution for transport in the EU-28**



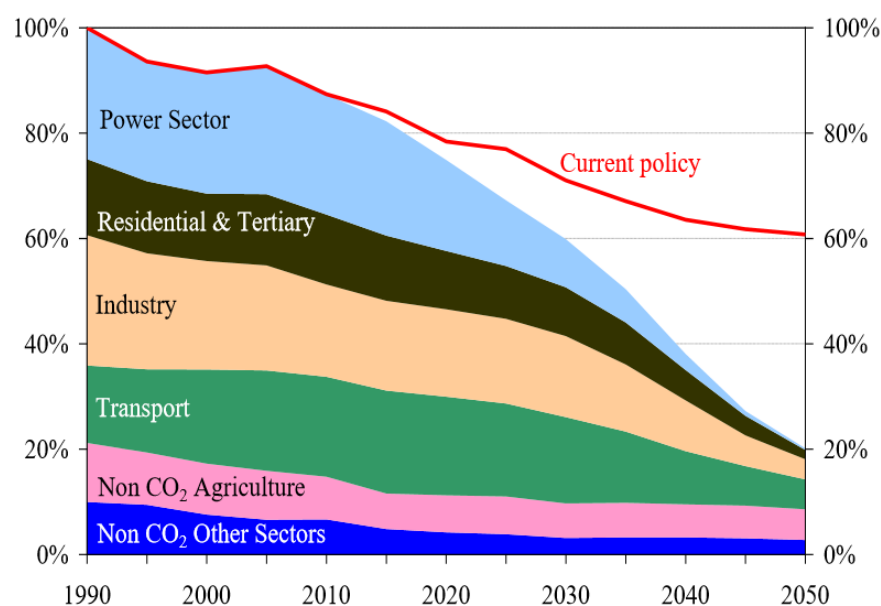
Source: EEA (2017), Renewable Energy in Europe 2017 Recent growth and knock-on effects, p. 28

**Annex 4: Estimated gross effect on greenhouse gas emissions in the EU-28**



Source: EEA (2017), Renewable Energy in Europe 2017 Recent growth and knock-on effects, p. 32

**Annex 5:** Projection of transition to a low-carbon EU economy in 2050 (greenhouse gas emissions by sector over time as % of 1990 levels)



Source: European Commission (2016), EU Climate Policy explained, p. 22

**Annex 6:** Overview of world-wide and European regulatory advancements on the subject of climate control

Event Date	Event description
1988	Creation of Intergovernmental Panel on Climate Change (IPCC)
9 May 1992	The Framework Convention on Climate Change (UNFCCC) was adopted in at the UN Summit on Sustainable Development in Rio
31 December 1992	Publication of the EU Directive on protection of waters against pollution by nitrates <sup>1</sup>
1996	The EU's Environmental Council agreed to limit global temperature rise to below 2°C above preindustrial level
1997	Kyoto Protocol Approval
2001	Decision of the US not to ratify the Kyoto protocol
2002	Ratification of the Kyoto Protocol by the EU
2005	EU Emission Trading System (ETS)
14 June 2006	Publication of the EU Directive on emissions from air-conditioning systems in motor-vehicles, EU Mobile Air Conditioning Directive <sup>2</sup>
2007	European Council declares about its independent commitment to reduce by 20% the greenhouse gas emission by 2020
2009	Climate Summit in Copenhagen that resulted in informal Copenhagen Accords and one after year a Cancun Agreement
23 April 2009	Publication of the EU "Climate and energy package"

<sup>1</sup> Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources; OJ L 375, 31.12.1991, p. 1–8: <http://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:31991L0676&from=fr>

<sup>2</sup> Directive 2006/40/EC of the European Parliament and of the Council of 17 May 2006 relating to emissions from air-conditioning systems in motor vehicles and amending Council Directive 70/156/EEC; OJ L 161, 14.6.2006, p. 12–18

2009	Durban mandate where UNFCCC agreed to launch negotiations on a new international agreement
February 2010	Establishment of Directorate General for Climate Action
15 December 2011	Publication by the Commission of a Low Carbon and Energy Roadmaps
13 April 2011	Proposal for a Council directive on the taxation of energy products <sup>3</sup>
31 May 2011	Publication of the EU Regulation on emission performance standards for new light commercial vehicles <sup>4</sup>
14 November 2012	Publication of the EU Energy Efficiency Directive <sup>5</sup>
2013	Publication of the 5 <sup>th</sup> Assessment Report by the IPCC
2013	Warsaw first agreement to come with “Intended Nationally Determined Contributions” (INDCs) to Paris
27 March 2013	Renewable Energy Progress Report
December 2013	“Clean Air Programme for Europe”
2014	Lima second agreement to come with “Intended Nationally Determined Contributions” (INDCs) to Paris
20 March 2014	Publication of the EU Regulation on modalities for reaching the 2020 target to reduce CO <sub>2</sub> emissions from new light commercial vehicles <sup>6</sup>
20 May 2014	Publication of the EU Regulation on fluorinated greenhouse gases <sup>7</sup>
28 June 2014	Publication of Guidelines on State Aid for environmental protection and energy
24 October 2014	The European Council adopts a series of targets in view of 2030 (European Council issued the conclusion of their meeting where heads of EU governments fixed new objectives for the 2030 climate and energy policy framework as its contribution to the world climate agreement)
25 February 2015	The Commission publishes “A Framework Strategy for a Resilient Energy Union with a Forward Looking Climate Change Policy”
12 December 2015	The Approval of the Paris Agreement (COP21)
7 November 2016	COP22 UN Climate change Conference in Marrakech
30 November 2016	Publication of the “Clean Energy for All Europeans” package
6 – 17 November 2017	COP23 UN Climate change Conference in Bonn

<sup>3</sup> Proposal for a COUNCIL DIRECTIVE amending Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0169:FIN:en:PDF>

<sup>4</sup> Regulation (EU) No 510/2011 of the European Parliament and of the Council of 11 May 2011 setting emission performance standards for new light commercial vehicles as part of the Union's integrated approach to reduce CO<sub>2</sub> emissions from light-duty vehicles; OJ L 145, 31.5.2011, p. 1–18; <http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011R0510&from=EN>

<sup>5</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC; OJ L 315, 14.11.2012, p. 1–56. <http://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32012L0027&from=EN>

<sup>6</sup> Regulation (EU) No 253/2014 of the European Parliament and of the Council of 26 February 2014 amending Regulation (EU) No 510/2011 to define the modalities for reaching the 2020 target to reduce CO<sub>2</sub> emissions from new light commercial vehicles; OJ L 84, 20.3.2014, p. 38–41.

<sup>7</sup> Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006; OJ L 150, 20.5.2014, p. 195–230

## Annex 7: Companies sample

Company Name	Activity description <sup>8</sup>	Sector of activity	Country of origin
ABENGOA SA	<p>This technology company offers solutions for sustainable development. It was founded in 1941 by Javier Benjumea Puigcerver to provide installation services as Spain built out its electricity grid. Operating in more than 70 countries, it is one of Spain's largest applied engineering and process management companies. The company's corporate headquarters is located in Sevilla, Spain.</p> <p>The company is divided into four business units: Bioenergy, Environmental Services, Information Technology, and Engineering and Industrial Construction. The Bioenergy Division produces bioethanol from vegetable products, which is used to manufacture a petrol additive or can be blended directly with petrol or gas oil. Environmental Services Division includes aluminum, salt slag and zinc waste recycling, industrial waste management and cleaning and engineering. The Information Technology Division offers real-time solutions for energy, environment, traffic and transport sectors. The four business unit engineers, constructs and maintains electrical and mechanical infrastructures, and also develops, constructs and operates industrial and power plants. The company is also involved in solar energy generation through Solucar Energia. Through its operating units, the company manages projects for the energy, telecommunications, transport, water and environmental industries. It has been diversifying from its core engineering and construction operations to waste management and other environmental services and bioethanol production. The company controls Spanish aluminum and steel-dust recycling company Befesa Medio Ambiente and US-based ethanol producer Abengoa Bioenergy Corp.</p>	Bioenergy (bioethanol from vegetable products), Environmental Services, Information Technology, and Engineering and Industrial Construction	Spain
ABO-GROUP ENVIRONMENT NV	<p>The company, based in Antwerp, Belgium, is Europe's leading developer and operator of sustainable energy projects using biomass, biogas and cogeneration. Formerly known as Theolia Benelux, it was established in 2002.</p> <p>The company designs, builds, finances and operates projects on behalf of its clients. It typically works with small to medium sized agricultural and industrial partners to develop projects in the 1 MWe to 20 MWe range. The company offers renewable energy solutions from initial concept design through to the final trading of the electricity generated. It has expertise in European energy trading markets as well as in trading European green power and CHP (combined heat and power) certificates.</p> <p>The company finances or co-finances its projects. It also offers co-investment opportunities for its project partners and advises on sources of external funding for the cost of construction.</p>	Developer and operator of sustainable energy projects (biomass, biogas and cogeneration)	Belgium
CROPENERGIES AG	<p>The company, based in Germany, is engaged in the production and sale of bioethanol predominantly for the fuel sector. It was incorporated in the year 2006 and has its registered head office based in Mannheim.</p> <p>The company is a leading European producer of bioethanol for the fuel sector. It has subsidiaries in France and Belgium. The company sees itself as a trailblazer in the sector of commercial bioethanol production and sets standards in the fields of engineering and innovation. The heart of its bioethanol production is the production plant in Zeitz, Saxony-Anhalt, Germany. This plant is the largest bioethanol plant in Europe.</p> <p>The company operates as a subsidiary of Südzucker AG, a Germany-based company recognized as the largest sugar producer in the European Union (EU) with an annual production of approximately three million metric tons.</p>	Production and sale of bioethanol	Germany
EDP RENOVAVEIS, S.A.	<p>This company designs, develops, manages and operates power plants that generate electricity using renewable energy sources. It was founded and incorporated in 2007. The registered business office of the company is located in Oviedo, Spain.</p>	Design, development, management of	Spain

<sup>8</sup> Source : Orbis database

	<p>The company operates wind farms and solar plants to generate and deliver clean electricity.</p> <p>It is considered one of the largest generators of wind energy globally</p> <p>The company is active and operational in Spain.</p>	power plants (wind and solar)	
ELIA SYSTEM OPERATOR S.A	<p>This Belgian company is engaged in the transmission of high-voltage electricity. It was incorporated in 2001. With its headquartered in Brussels, the company is Europe's leading player in high-voltage electricity transmission.</p> <p>Under license by the federal government and the regional governments, the company operates more than 8,000 kilometers of lines and underground cables throughout Belgium. With a transmission capacity of approximately 380kV, it plays a crucial role in the community by transmitting electricity from generators to distribution systems, which in turn deliver to consumers. The company also plays an essential part in the economy, as its system supplies power directly to major companies connected to the grid.</p> <p>The company provides green energy as well as tariffs for grid use, subscription services for holders of grid access contracts, production coordination, commercial metering, and green certificates.</p> <p>Additional services include project design/engineering, project implementation, preventative and corrective maintenance, audits, consultancy, and training.</p>	Provide green energy, tariffs for grid use, grid access contracts and green certificates; project design and implementation	Belgium
ENERGIEKONTOR AG	<p>The company, with headquarters in Bremen, Germany, is engaged in wind farm development and wind farm management in a number of European countries. The company designs, establishes and trades wind farm projects. Established in 1990 in Bremerhaven in Northern Germany to plan wind farms, the company is one of the leading wind energy companies in Germany.</p> <p>The company was floated on the new market stock exchange in Frankfurt in 2000 and has been quoted on the regulated market in Frankfurt since 2002</p> <p>The company is a complete service company. It manages projects from the initial site selection through planning, building and fund sales to operation and management of the running wind farm. The company also offers service activities connected with the operational management of wind farm companies. The company has built more than 60 wind farms comprising over 400 wind turbines with a total power of around 450MW or 650m euro investment volume. It also operates through its branches in Bremerhaven and Krefeld.</p> <p>Outside Germany, it is active in France, Greece, the United Kingdom, Portugal and Spain. The company is the first wind farm project developer in Germany to plan wind farm projects in other European countries and has been active outside Germany since 1995. Its wind farm projects are financed by investment from private individuals.</p> <p>The company is an independent company and does not have ties with any particular wind turbine manufacturer or electricity company.</p>	Wind farm development and management	Germany
ENERGIE EUROPE SERVICE	<p>The company is engaged in the production of renewable energy. It was incorporated in December 1998 and has its registered head office located in Paris, France.</p> <p>The company generates renewable energy through biomass, biogas, and solar radiations. Its activity is organized into three areas: production of photovoltaic solar energy, development of plants for producing thermal and electric power from agricultural and forest biomass, and processing into energy of biogases from waste and byproduct gases from methanization.</p>	Energy generation from biomass, biogas and solar radiation	France
E4U A.S.	<p>The company is engaged in the operation of an energy firm. It was created in August 2010 and has its registered business office strategically located in Dubnany, Czech Republic. The company concluded contracts for the purchase of solar heating plants, which is the technology of centralized delivery of heat to municipalities. It focus primarily on the plants generating energy from renewable sources such as green energy. It aims for a gradual growth in the volume of managed assets so that the project portfolio is sufficiently diversified.</p>	Operation of solar heating plants	Czech Republic
FLUID SA	<p>This company is primarily engaged in the provision of renewable fuel for power engineering. It was incorporated in 1964. The</p>	Production and distribution of	Poland

	<p>registered business office of the company is located in Sedziszow, Poland.</p> <p>The company offers facilities construction and license sales; production and wholesale distribution of biocarbon Fluid brand for the power industry and agriculture; and green energy production. The company is active and operational in Poland.</p>	renewable fuel (biocarbon)	
<b>G-ENERGY SA</b>	<p>The company is active in field of renewable energy sector. It was incorporated in 2010 and has its registered head office is located in Warsaw, Poland. The company's activity is based on the renewable energy sector, acquired from natural sources - wind energy, biomass and energy of the sun. It also cooperate with other entities in the industry, and such action is to establish the foundations for the emergence of the group, which seeks to take the position of leader on the Polish market for renewable energy. It implements a technology of permanent Biofuels secondary polycarbonate-based original, competitive with currently used in the country based solutions for the manufacture of composite municipal sewage sludge with the addition of post-fermentation of biomass and post-consumer polyolefins.</p>	Active in the sector of wind, solar and biomass	Poland
<b>GOOD ENERGY GROUP PLC</b>	<p>The company, formerly known as Oval (1538) Limited, is a holding company for a group engaged in purchase, generation and sale of energy from renewable sources. The company was incorporated in 2000 and has its registered head office located in Bristol, United Kingdom. Electricity sold by its Good Energy Limited subsidiary is matched 100 percent by purchases from wholly renewable sources including wind, sun, and naturally falling water. The company supplies retail electricity services to more than 14,000 domestic and business customers, which some of whom own shares in Monkton Group. The company's Monkton Generation Limited subsidiary is the Group's acquisition vehicle, actively seeking investments in renewable generation assets. Monkton Generation also owns Delabole, a 4-MW wind farm. Other subsidiaries of Monkton Group include Good Carbon Limited, Good Electricity Limited, Good Gas Limited, Good Solar Limited, Monkton Trustees Limited and Unit Energy Limited. The company desires to address the problems of scarce energy resources and climate change by providing renewable energy in the deregulated United Kingdom power market, to "keep the world a habitable place."</p>	Purchase, generation and sale of energy from wind, sun and water	United Kingdom
<b>GREENTECH ENERGY SYSTEMS A/S</b>	<p>This company is engaged in the production of electricity through the utilization of wind power. It has its headquarters in Herlev, Denmark. In addition to its operations in Denmark, the company is also engaged in investment in projects or companies producing energy from renewable resources. It has operations across Denmark, as well as in Germany, Italy, Norway and Poland. It invests in windmill projects in Italy and Poland, and owns 19 wind mills in Denmark. It has an installed production capacity of 166 MW, as well as 24 MW under construction, and 827.3 MW development portfolio (wind and solar projects). The company aims to develop, own or partly own energy plants, which produce electricity on the basis of wind power. The company was incorporated in 1924.</p>	Production of electricity from the wind power	Denmark
<b>MDI ENERGIA SA</b>	<p>The company is engaged in the investment of enterprises operating in a broad sector of renewable energy sources. The company was formerly known as BBI Zeneris Narodowy Fundusz Inwestycyjny S.A. The company is listed on the Warsaw Stock Exchange under the ticker symbol BBZ. The registered head office of the company is located in Poland.</p> <p>The company's core business is financing and co-financing of investment projects in the renewable energy market by taking up shares and organizing financing (loans and subsidies). It focuses on searching, evaluating, preparing, and executing investment projects aimed at producing green electrical energy and heat. The company is a part of BB Investment Group of companies that invests in businesses operating in various industry and service sectors. The Group operates in Poland.</p>	Investment in enterprises operating in sector of renewable energies	Poland
<b>MVA GREEN ENERGY SA</b>	<p>The company is engaged in the manufacture and sale of products that serve and support the environmental concerns in Poland. It was founded in the year 2010 and has its head office located in Lodz, Poland.</p> <p>The company provides cavitation hydrodynamic generators that are used for sludge disintegration; increasing the production of biogas and reducing the fermentation time, and the amount of solids in</p>	Manufacture, sale and installation of products related to renewable	Poland

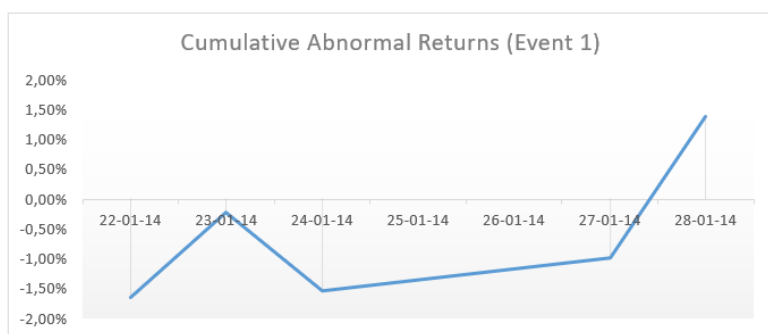
	wastewater treatment plants. It also offers leasing, installation, and technical support services, as well as undertakes projects related to renewable energy sources and environmental protection for reducing CO2 emissions. The company has its active operations within the country.	energies (hydrodynamic generators and others)	
NORDEX SE	The company, with registered head office located in Rostock, Germany, is a developer, manufacturer and supplier of wind turbines. It was launched in 1985, before the international demand for wind turbines increased in the first half of the nineties. Since April 2001, the company has been listed on Neuer Markt segment of the Frankfurt Stock Exchange. It is one of the world's leading suppliers of wind turbines. The principal focus is on units with a high capacity - above all in the megawatt range: the strongest growth segment in the sector. With the largest serial produced wind turbine in the world, the Nordex N80/2500 kW and the megawatt turbines Nordex S70/1500 kW and Nordex S77/1500 kW, the company is able to offer wind turbines for onshore use. The Nordex N90/2300 kW and the Nordex N80/2500 kW turbines for offshore use, round off its megawatt product family with machines especially designed for inland use and the open sea. The company also offers several series of small units for international markets. Its core competencies lie in the complete design of wind turbines, the production of key components, and the assembly of the complete system, up to the turnkey installation of the wind farm and subsequent support. On a global scale, the company has offices and subsidiaries in 18 countries. The production facility at Rostock, Germany handles turbine assembly as well as the manufacture of rotor blades and switch cabinets. As developer and manufacturer of wind turbines, it concentrates on its core competencies. In addition to the overall technical design, the company's know-how also lies in the development of rotor blades with a length of up to 40 and 45 meters and in the integrated electrical and control technology for wind turbines. The company is active in China, Denmark, the United Kingdom, France, Greece, Italy, Japan, Austria, Sweden, Spain and the United States.	Development, manufacture and supply of wind turbines	Germany
PHOENIX SOLAR AG	The company, formerly known as Phönix SonnenStrom AG, is engaged in the construction and wholesale distribution of photovoltaic systems and accessories. It developed from the Photovoltaic division of Phönix Solar Initiative of the Association of Energy Consumers in Germany, and was established in November of 1999. The company is registered as a publicly quoted company, with shares listed on Frankfurt Stock Exchange under the ticker symbol PS4. The main business office of the company is located in Sulzemoos, Germany. The company offers power plants, solar modules, and accessories. It also supports in the planning process, logistics services, and technical training for sales and assembly, as well as operates a service hotline for specialist firms. In addition, the company is involved in planning, developing, constructing, and operating roof-top or ground-mounted photovoltaic plants. Further, it offers consultancy and other services, as well as supports with financing, maintenance, and repair services. The company is considered one of the leading specialist wholesalers of complete solar power systems, solar modules, and inverters in the country The company is active and operational in Germany. The company serves electrical installation service providers, electronics retailers and wholesalers, heating/sanitary installation companies, roofing operations, solar companies, private individuals and companies in trade and industry, as well as utility companies, local authorities, and institutional investors, such as insurance and investment companies.	Construction and wholesale distribution of photovoltaic systems	Germany
PV CRYSTALOX SOLAR PLC	This company is engaged in the manufacture and supply of solar-grade silicon products serving the solar cell industry. It was established in 1982 as an ingot furnace manufacturer, and has its registered head office strategically located in Oxfordshire, United Kingdom. The company is a leading manufacturer of multicrystalline silicon ingots and wafers, the key component in solar power systems in the United Kingdom. It produces multicrystalline silicon ingots and single crystal silicon wafers from ingots, which are used in solar	Manufacture and supply of solar-grade silicon	United Kingdom

	<p>power generation systems. The company has production plants located in Oxfordshire (United Kingdom) and Erfurt (Germany). It also has operations in the United Kingdom, Germany, and Japan. It is listed on the London Stock Exchange and was a former constituent of the FTSE 250 Index.</p> <p>The company aims to drive growth through a secured silicon feedstock supply, strengthening its position as a leading pure-play solar wafer manufacturer.</p>		
SIEMENS GAMESA RENEWABLE ENE	<p>The company is engaged in the manufacture, supply and installation of products in the aeronautics and renewable energy sectors. It is based in Zamudio, Spain and with operations worldwide. It was founded in 1976 and was formerly known as Grupo Auxiliar Metalurgico SA.</p> <p>The company has four business divisions. Gamesa Aeronautica offers aeronautical structures and components. Gamesa Energia is engaged in the generation of renewable energy. Gamesa Eolica manufactures wind turbines. Gamesa Servicios offers advanced services. The company's operations in the area of renewable energy, especially in wind power, center on the development, construction and recurring sale of wind farms; the engineering, design, manufacture and sale of wind turbines, and the provision of specialist services. Its aeronautical operations include participating in programs for the manufacture of aeronautical structures, the development of design engineering and manufacture for internal development and for customers, and the manufacture of parts with composite materials. The company's strategy is aimed at growth as the principal method of generating value for its shareholders. The company, through its overseas operating subsidiaries, is active in Greece, Italy, Portugal, Argentina, Australia, France, United States and Dominican Republic.</p>	Manufacture, supply and installation of products in aeronautics and renewable energy	Spain
SMA SOLAR TECHNOLOGY AG	<p>This company is engaged in the manufacture and sale of inverter and photovoltaics solutions. Founded in 1981, and has its registered head office in the city of Niestetal in Germany.</p> <p>The company is a leading global specialist in photovoltaic system technology. Its products and services include solar inverters, battery inverters, medium-voltage stations, system solutions &amp; packages, smart module technology, DC technology, monitoring &amp; control, SMA data services, and planning software.</p> <p>The company's products are marketed and sold throughout Germany through its network of distributors in the country</p>	Manufacture and sale of photovoltaic solutions	Germany
SOLARIA ENERGIA Y MEDIO AMBIENTE, SA	<p>This company is engaged in renewable energy specialising in the implementation and development of solar photovoltaic technology. It was founded in 2002 and has its registered business office based in Madrid, Spain.</p> <p>The company's activities comprise the designing and installation of solar, thermal, photovoltaic and wind energy plants. It owns, manages and operates PV plants in Spain, Italy, Uruguay, Greece and Brazil with a total generation capacity of more than 70 MW. It is focused in the generation and sale of electrical energy exclusively from its solar plants connected to the grid, as well as in operation and maintenance of solar photovoltaic installations, and promotion and operation of photovoltaic generation projects.</p>	Design and installation of solar, thermal, wind energy plants	Spain
TERNA S.P.A. - RETE ELETTRICA NAZIONALE	<p>The company is engaged in the transmission, maintenance and distribution of electrical energy throughout Italy. Founded in 1999, its registered head office is located in Rome.</p> <p>The company involves in the design, construction, management, development, operation, and maintenance of high-voltage power lines. It also engages in the construction and maintenance of electricity transmission grids and photovoltaic plants for the generation of electricity, including renewable generation. In addition, the company involves in the operation and maintenance of high-voltage plant owned by other entities; provision of plant engineering services; and maintenance of the third-party fiber optic network and housing of telecommunications equipment.</p> <p>The company has approximately 62,000 kilo meters of high voltage lines; 383 transforming and switching stations; and 22 interconnection lines with foreign countries.</p>	Construction and management of high voltage power lines, photovoltaic plants	Italy
TERNA ENERGY SOCIETE	<p>This company is involved in the production of energy from renewable energy sources (RES) and the construction and operation of wind farms, small hydroelectric plants and integrated process units for the overall management and energy utilization of wastes</p>	Generation of energy, construction	Greece

ANONYME INDUSTRIAL COMMERCIAL TECHNICAL COMPANY S.A.	and biomass. It was founded in 1997 and has its registered office located in Athens, Greece. The company undertakes the full spectrum of activities and works required for the materialization of RES installations, the investigation of the available renewable energy potential, to the design, licensing and construction, as well as operation, maintenance and commercial exploitation of RES units. It is also involved in co-generation of electric energy and heat, as well as in the utilization of solar energy. In addition, the company undertakes and constructs specialized public and private works. Its construction projects include the Leondario Tunnel - Smoko dam and Step up substation. The company operates as one of the subsidiaries of Terna S.A, a member of GEK Group, is a company active in the construction, energy and industrial sectors.	and operation of wind, small hydroelectric and biomass plants	
VERBIO VEREINIGTE BIOENERGI	<p>This company is a manufacturer and supplier of biofuels. With about 750 employees at three locations the company produces biodiesel, ethanol fuel and biogas on an industrial scale and has developed its own processes. It was founded in 2006 and conducts business from its registered head office which is strategically located in Leipzig, Germany.</p> <p>The company is one of the leading independent producers and suppliers of biofuels and the only industrial-scale producer of biodiesel, bioethanol and biomethane in Europe. Its nominal annual capacity currently amounts to some 470,000 tonnes of biodiesel, 260,000 tonnes of bioethanol and 600 gigawatt-hours of biomethane. It uses its own energy-saving production processes and cutting-edge technologies to manufacture its highly efficient fuels. Compared to standard petrol and diesel, its biofuels cut carbon dioxide by up to 90 percent. The company operates in four production facilities in Germany and delivers its products directly to European mineral oil corporations, mineral oil traders, independent gas stations and haulage companies. Furthermore, the company is committed to the principle of sustainability and treat natural resources carefully and responsibly</p>	Manufacture and supply of biofuels	Germany
VERBUND AG	<p>The company, with headquarters in Wien, is engaged in the generation and transmission of electricity in Austria. It was founded in 1947 on the basis of the 2nd Nationalisation Act under the name Sterreichische Elektrizitätswirtschafts-AG, with the primary task of rebuilding and expanding the Austrian electricity system.</p> <p>The company is the largest producer and transporter of electricity in Austria; and one of the leading hydropower producers and also one of the most profitable energy utilities in Europe. It focuses on its core business, which is electricity and is active along the entire electrical value chain: from the turbine to the power outlet. It is a vertically integrated electricity group which covers each step along the electricity path: from generation and transmission to trading and distribution. The company generates 85 percent of its electricity using Hydro power and 15 percent is produced using non-nuclear thermal power plants during times of low water availability. The company's Verbund brand represents corporate principle of sustainability through clean electricity from domestic, renewable, environmentally friendly, cost-effective and socially compatible hydropower.</p> <p>The company's primary objective is to achieve value-generating growth through the adoption of a selective investment policy in Europe.</p> <p>The company's thermal power plant park includes the two largest plants in Austria, namely the Dürnrohr (Lower Austria) and Mellach (Styria) power plants. It distributes its products and services directly to its end-customer segments in Austria. The company has further subsidiary operations in Germany, Italy, Poland, Hungary, Slovakia, the Czech Republic, Greece and Slovenia. Customers of the company include private households, traders, medium-sized enterprises, and large industrial companies such as Siemens, Magna, Baxter and Hewlett Packard.</p>	Generation and transmission of electricity, leading hydropower producer	Austria
VESTAS WIND SYSTEMS A/S	This company, with registered main office in Aarhus, Denmark, is engaged in the development, manufacture, trade, marketing and maintenance of wind power systems that use wind energy to generate electricity. It was founded in 1945 by Peder Hansen. With more than 30,000 wind turbines generating electricity in more than	Design, manufacture, trade of wind power systems	Denmark

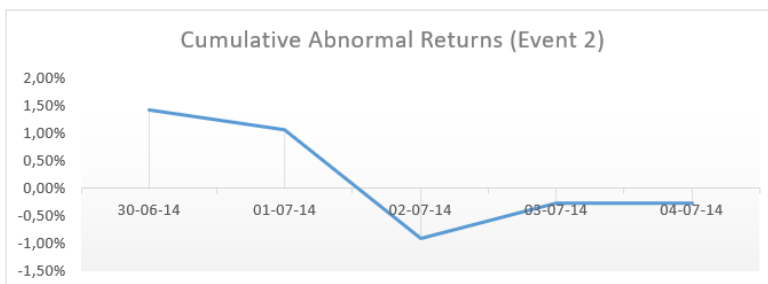
	<p>60 countries on five continents, the company is the world's largest manufacturer and supplier of wind power systems. The company supplies products from individual turbines to the delivery of turnkey wind power systems. These wind turbines are capable of operating on land and offshore. Further, the company also produces Supervisory Control and Data Acquisition (SCADA), a system that optimizes the performance of each wind turbine, and ensures that the wind power plant as a whole performs perfectly. In addition, the company also offers installation, repair, and maintenance services as well as supplies guidance to customers in connection with the development of financing and ownership of wind turbine projects. Its production facilities are located in Denmark, Germany, India, Italy, Scotland, England, Spain, Sweden, Norway, Australia, and China.</p>		
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### Annex 8: Cumulative abnormal returns of 5-day period after the studied event



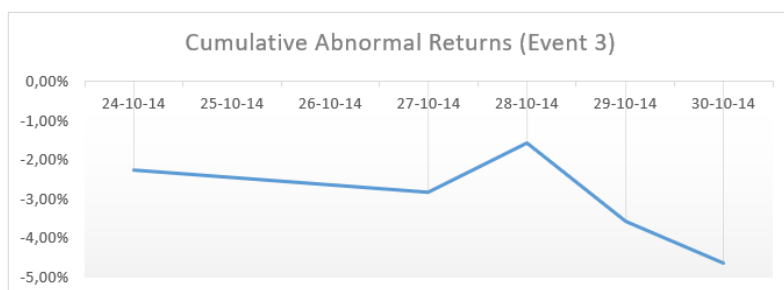
#### Event 1: 22-01-14

Date	22-01-14	23-01-14	24-01-14	27-01-14	28-01-14
CAR	-1,6419%	-0,2226%	-1,5283%	-0,9754%	1,3747%



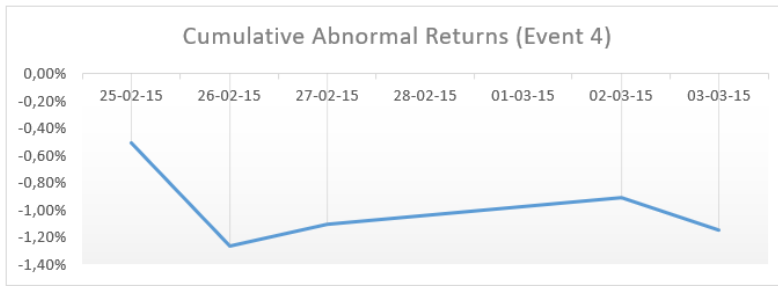
#### Event 2: 30-06-14

Date	30-06-14	01-07-14	02-07-14	03-07-14	04-07-14
CAR	1,4110%	1,0621%	-0,9161%	-0,2808%	-0,2729%



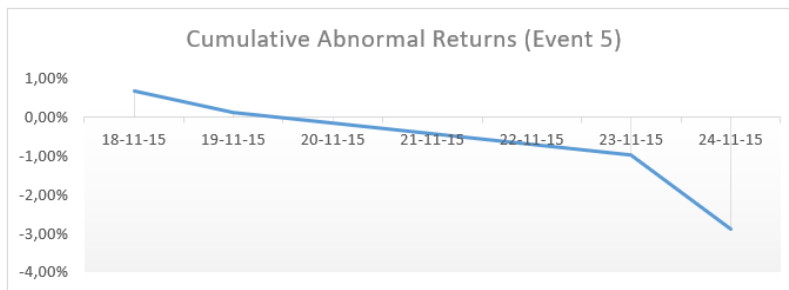
#### Event 3: 24-10-14

Date	24-10-14	27-10-14	28-10-14	29-10-14	30-10-14
CAR	-2,2565%	-2,8428%	-1,5693%	-3,5602%	-4,6291%



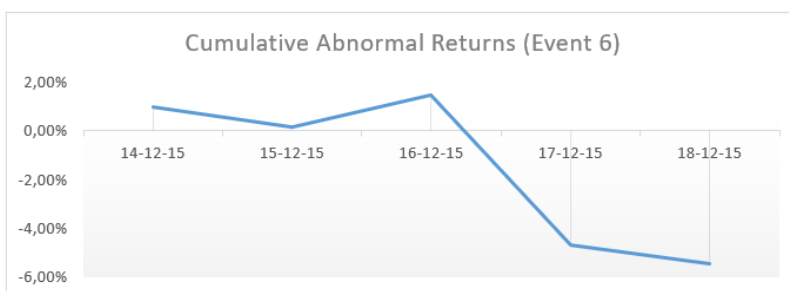
**Event 4: 25-02-15**

Date	25-02-15	26-02-15	27-02-15	02-03-15	03-03-15
CAR	-0,5044%	-1,2627%	-1,1015%	-0,9076%	-1,1480%



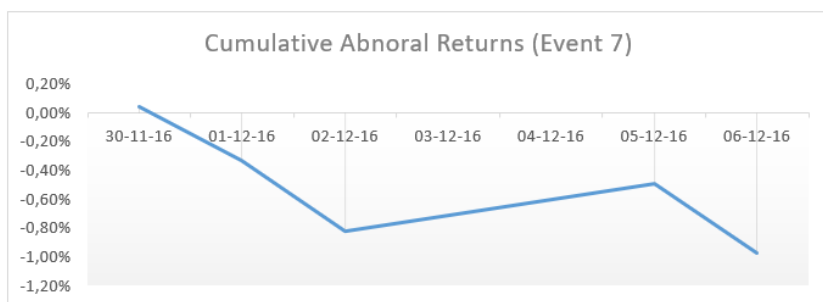
**Event 5: 18-11-15**

Date	18-11-15	19-11-15	20-11-15	23-11-15	24-11-15
CAR	0,6749%	0,1140%	-0,1547%	-0,9782%	-2,9006%

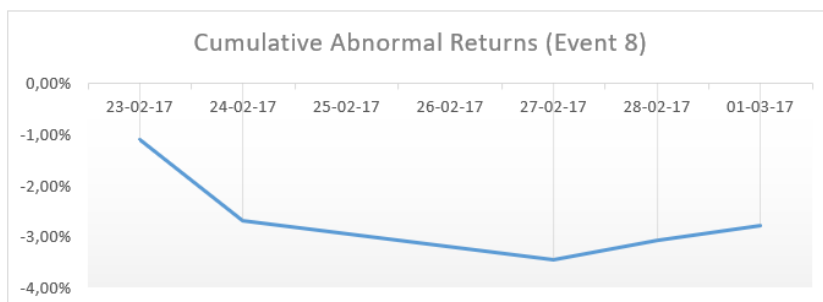


**Event 6: 14-12-15**

Date	14-12-15	15-12-15	16-12-15	17-12-15	18-12-15
CAR	0,9581%	0,1725%	1,4624%	-4,6867%	-5,4451%

**Event 7: 30-11-16**

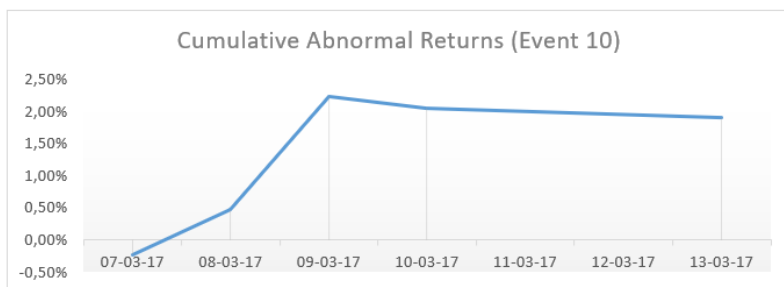
Date	30-11-16	01-12-16	02-12-16	05-12-16	06-12-16
CAR	0,0403%	-0,3317%	-0,8196%	-0,4971%	-0,9735%

**Event 8: 23-02-17**

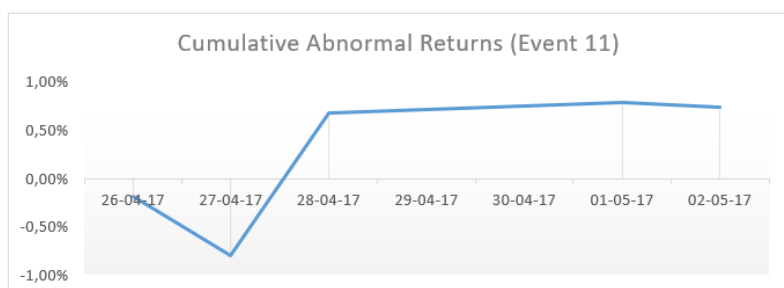
Date	23-02-17	24-02-17	27-02-17	28-02-17	01-03-17
CAR	-1,0969%	-2,6879%	-3,4516%	-3,0750%	-2,7803%

**Event 9: 01-03-17**

Date	01-03-17	02-03-17	03-03-17	06-03-17	07-03-17
CAR	0,3400%	-0,5578%	-0,7314%	0,1857%	0,0985%

**Event 10: 07-03-17**

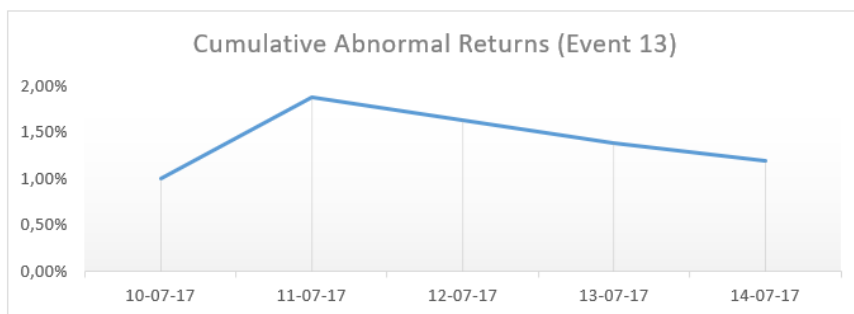
Date	07-03-17	08-03-17	09-03-17	10-03-17	13-03-17
CAR	-0,2368%	0,4764%	2,2364%	2,0514%	1,9114%

**Event 11: 26-04-17**

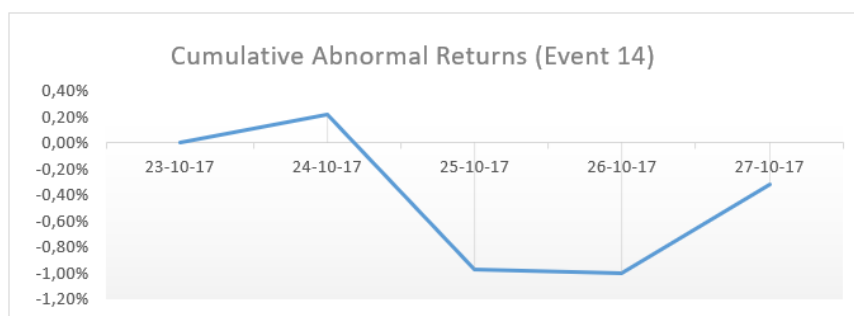
Date	26-04-17	27-04-17	28-04-17	01-05-17	02-05-17
CAR	-0,1812%	-0,7939%	0,6740%	0,7851%	0,7384%

**Event 12: 01-06-17**

Date	01-06-17	02-06-17	05-06-17	06-06-17	07-06-17
CAR	-0,9079%	-0,9559%	-0,8801%	-1,4305%	-2,4526%

**Event 13: 10-07-17**

Date	10-07-17	11-07-17	12-07-17	13-07-17	14-07-17
CAR	0,9959%	1,8710%	1,6342%	1,3840%	1,1967%

**Event 14: 23-10-17**

Date	23-10-17	24-10-17	25-10-17	26-10-17	27-10-17
CAR	0,0046%	0,2138%	-0,9720%	-0,9973%	-0,3140%

**Event 15 : 13-11-17**

Date	13-11-17	14-11-17	15-11-17	16-11-17	17-11-17
CAR	0,5237%	-0,3807%	0,2964%	0,7584%	0,4255%

**Annex 9:** Significance test of cumulative returns of 5-day period prior to event date.

Variable	Statistique t	Coefficients
Constante	-1,272930148	-0,000387093
Variable X 1 = Market beta	19,96900724	0,592607467
Variable X 2 = Event 15	-1,519516562	-0,006482939
Variable X 3 = Event 14	-1,045742733	-0,004457981
Variable X 4 = Event 13	0,678412134	0,002892108
Variable X 5 = Event 12	-0,209456891	-0,000892907
Variable X 6 = Event 11	-0,560821639	-0,002392638
Variable X 7 = Event 10	0,230754377	0,001004159
Variable X 8 = Event 9	-1,22032923	-0,005415327
Variable X 9 = Event 8	-0,269843356	-0,001174266
Variable X 10 = Event 7	0,37410417	0,001594799
Variable X 11 = Event 6	0,200714472	0,000858997
Variable X 12 =Event 5	-0,107061096	-0,000456397
Variable X 13 = Event 4	-0,680976534	-0,002903708
Variable X 14 = Event 3	-0,596439421	-0,002544263
Variable X 15 = Event 2	0,340277739	0,001450821
Variable X 16 = Event 1	0,775290852	0,00330506

**Annex 10:** Phillips-Perron non-stationarity test statistics.

**Test de Phillips-Perron** (PP(sans constante) / Lag: Court / Stock price) :

Tau (Valeur observée)	-177,199
Tau (Valeur critique)	-1,941
p-value (unilatérale)	1,000
alpha	0,05

Interprétation du test :

H<sub>0</sub> : La série comporte une racine unitaire.

H<sub>a</sub> : La série ne comporte pas de racine unitaire. La série est stationnaire.

Etant donné que la p-value calculée est supérieure au niveau de signification seuil alpha=0,05, on ne peut pas rejeter l'hypothèse nulle H<sub>0</sub>.

Le risque de rejeter l'hypothèse nulle H<sub>0</sub> alors qu'elle est vraie est de 100,00%.