

ARERA: FIGURES FOR PUBLIC UTILITIES

The Authority's Annual Report has been published online.

The 2020 data for electricity, gas, water and waste.

Milan, 9 July 2021 - The two volumes of the ARERA - Italian Regulatory Authority for Energy, Networks and Environment - Annual Report on the State of Services and Regulatory Activities in 2020 have been published and can be downloaded from the website www.arera.it.

The usual presentation of the Board to Parliament and the Government will take place at the end of September.

The contents of the two volumes cover the calendar year 2020, which was strongly affected by the national and international impact of the COVID pandemic. This picture will change in 2021, as economies start to recover.

Average electricity prices for Italian domestic consumers in 2020 significantly improved compared to other Euro Area countries, being lower than the continental average, with German prices the most expensive. **Gas consumption** is declining and Italian prices are still higher than the EU average for domestic customers, but the gap is narrowing.

In the water sector, 15.5 billion euros of investments were made, approximately 98% of planned interventions were completed and leakages were down from 43% to 41%; the average expenditure for a typical family of 3 people was 317 €/year.

The **governance of the waste sector** is fragmented, with more than 7,400 operators listed on the Authority's registry, along with 3,523 territorially competent bodies; the waste tariff method covers over 48 million people.

More than 1.8 million bonuses have been granted to families in need for discounts on water, electricity and gas supplies, amounting to more than 232 million euros, figures that are set to increase, with the automatic discount on the bill set to begin from July 2021. These are just some of the main issues concerning electricity, gas, water, waste and heating that emerge from **over 800 pages of the volumes** of the ARERA Annual Report, a **snapshot of public utilities in the country** in the year of the pandemic.

"The figures for 2020 highlight the effect of the pandemic on consumption and price levels" notes the President of the Authority, Stefano Besseghini, "but at the same time the strong resilience of the energy and environmental infrastructure which, while ensuring continuity of service to citizens, has been able to lay the foundations for the recovery we have been experiencing in recent weeks. The Authority's action has supported this balancing act and from now on it will be at the disposal of the bodies presiding over the efficient use of National Resilience and Recovery Plan resources on the territory, ensuring the proper framework of rules suitable for non-routine operations".

SECTORIAL DATA BELOW

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ARERA SERVICES FOR CONSUMERS

SOCIAL BONUSES FOR FAMILIES: MORE THAN 1.8 MILLION BONUSES HAVE BEEN PROVIDED TO FAMILIES IN NEED FOR DISCOUNTS ON WATER, ELECTRICITY AND GAS SUPPLIES, AMOUNTING TO MORE THAN 232 MILLION EUROS, WITH THE AUTOMATIC DISCOUNT ON THE BILL SET TO BEGIN FROM JULY 2021.

Over 2020 and 2021, the Authority has gradually completed the necessary measures to automatically apply electricity, gas and water discount bonuses to the bills of those who are entitled to them, to avoid that fact that out of an eligible pool of over 3 million households, only a third actually apply for them. The new automatic bonus recognition system will be based on the exchange of the necessary information contained in the INPS databases and in the Integrated Information System, managed by Acquirente unico S.p.A., in compliance with the corresponding legislation on the protection of personal data.

In 2020, **854,900 families** had access to the **social bonus for electricity**, of which 805,303 received the bonus for economic hardship and 41,046 the bonus for physical hardship; **543,963 households had access to the social bonus for gas**; **461,334 households requested and obtained the social water bonus.**

The total amount of bonuses paid for the electricity sector (for economic and physical hardship) and for the gas sector was, respectively, approximately 135.5 million euros and 76.2 million euros. For the water sector, bonuses totalling approximately 20.4 million euros were paid out.

In 2020, 395,800 families that benefited from the water bonus were also beneficiaries of the electricity and gas bonuses, up 5.6% compared to the previous year.

SPORTELLO PER IL CONSUMATORE ENERGIA E AMBIENTE (ENERGY AND ENVIRONMENT CONSUMER HELP DESK): 12.9 MILLION EUROS RECOVERED IN FAVOUR OF CUSTOMERS AND END-USERS THROUGH CONCILIATION

The health crisis caused by the spread of COVID-19 required a rapid adjustment of the organisational structure of ARERA's Consumer Help Desk **call centre** (managed by AU), both in terms of remote working arrangements and increasing alternative contact methods for consumers (above all, the option for a call-back). However, the service maintained efficiency and effectiveness in terms of volumes going into the year. In 2020, there were 480,475 calls during service hours, (-0.5% compared to 2019). Both the average waiting time (174 seconds versus 149) and the average conversation time (227 seconds versus 200) increased slightly. The calls handled mainly concerned electricity and gas (91%). From March 26 to July 31, 2020, a new "key" was also made available on the phone tree called "Coronavirus Emergency: information on bills, payments and disconnections", to address any doubts on the Authority's measures related to the health crisis. The top three topics by volume of calls already recorded in 2019 remained the same: 47% of total calls were about bonuses, 22% on how to resolve disputes and 13% were cases opened at the Help Desk. **14,822 written requests** for "simple" information arrived at the Help Desk (an increase of 30.5% compared to the 2019 figures); of these, 13,486 related to the energy sectors and 1,336 to the water sector. On the other hand, requests to activate **special information procedures** amounted to 32,271, an increase of 12% compared to 2019. With these procedures, the Help Desk provides energy customers with specific information encoded in centralised databases the (Integrated Information System, Compensation System), such as identification of the unknown supplier in the case of a switch, requests to find out the commercial counterparty and the date of the switch.

In 2020, the activity of the **Conciliation Service** continued regularly during the lockdown, not only thanks to the online nature of the tool, but also by managing the formalities required for parties to participate - and, more generally, for procedures - in a highly flexible manner, through the use of the ordinary mechanisms of postponing and updating meetings. However, compliance with the maximum deadline for concluding the procedures, which was extended from 120 to 180 calendar days for the duration of the state of emergency, was always guaranteed. In 2020, 18,602 applications were received,

with an average of 73.6 applications per working day. Compared to 2019, there was a 16% increase in applications, further confirming a steadily increasing annual trend since 2017. The agreement rate is 71%, up 2% from 2019. The average time to complete procedures is 62 days (55 in 2019).

In 2020, the compensation, i.e. the financial consideration obtained by customers or end users through the conciliation agreement (in the form of value recovered with respect to the value of the dispute or refunds, indemnities, recalculation of incorrect billing, waiver of costs and default interest, etc.), was approximately **12.9 million euros**.

LITIGATION: 98.2% OF APPROVED RESOLUTIONS REMAIN VALID SINCE THE AUTHORITY LAUNCHED, APPEALS INCREASED IN 2020

Out of a total of 11,221 resolutions approved by the Authority since its inception (April 1997-31 December 2020), 1,222, equal to 10.9%, were appealed, and 205, 1.8% of those adopted, were annulled (with final judgement), in whole or in part.

In statistical terms, the "resistance" index of the Authority's resolutions to judicial review stands at 98.2%. In 2020, there was an increase in litigation in terms of the number of appeals compared to the previous two-year period: 144 appeals, compared to 62 in 2019 and 83 in 201.

ELECTRICITY

ELECTRICITY: PRICES LOWER THAN THE EUROPEAN AVERAGE FOR DOMESTIC CUSTOMERS. HIGHEST PRICES IN GERMANY

Average electricity prices for Italian domestic consumers for 2020 show a marked improvement compared to the other countries of the Euro Area, both in terms of prices before charges and taxes, and net prices.

In 2020, for the first time, gross prices were lower than those of the European average for all classes of household consumption, except for the first class (consumption below 1,000 kWh/year). The DB (1,000 - 2,500 kWh) and DC3 (2,500 - 5,000 kWh) classes show a negative differential in gross prices of -4% and -3% respectively (compared to -5% and +1% respectively in 2019).

These classes are the ones where the highest consumption is concentrated in our country, covering in one case 40% and in the other 41% of the total electricity billed to the domestic sector in 2020.

The last two classes (with consumption between 5,000 and 15,000 kWh/year for DD and above 15,000 kWh/year for DE), which represent limited shares of the total volumes of the domestic sector (11% for DD and 1% for DE) are those in which there have been the most significant improvements: the differentials have dropped in gross terms from +9% in 2019 to -1% in 2020, and from +13% to -6%, respectively.

Again in 2020, prices for classes three and above were higher than the Euro Area average by between +6% and +34%.

In terms of absolute tax values, Italy is no longer the country with the highest values, alongside Germany. **In terms of the incidence of the charges and taxes component, in 2020 the share ranges from 31% for the DB class and just under 47%** for the last class, values not too far from the average values of the Euro Area.

With regard to the main European countries, in 2020 **Germany was once again the country with the highest electricity prices for the domestic sector**. In comparison to their German counterparts, **Italian domestic customers** continue to pay decidedly lower final rates, with a gap that remained substantially stable compared to 2019 for the DB class, amounting to approximately **-26%** and increasing from -22% to -28% for the DC, from -16% to -27% for the DD class and from -11% to -28% for the last DE class. In terms of net prices, the differentials with Germany and France decreased, even becoming negative in some cases, with an increasing reduction as the class increases.

ELECTRICITY: THE GAP IN GROSS AVERAGE PRICES BETWEEN ITALIAN COMPANIES AND THE EURO AREA IS NARROWING. IT REMAINS ADVANTAGEOUS COMPARED TO GERMANY.

2020 marks an improvement in the situation for all classes. For the first time, prices for industrial customers in the penultimate class (20 to 70 MWh of annual consumption) also showed a negative differential compared to the prices of the Euro Area (-3%, against +15% in 2019), while the last class (from 70 to 150 MWh) turned to a minus sign once again, quite substantially at that (-16% after + 6% in 2019). Italian prices for the first class (consumption below 20 MWh/year), on the other hand, remain 27% more expensive, though this is an improvement compared to + 41% in 2019. For the other three classes, a positive differential remains, but it is narrowing in a sustained manner (from +17 to + 5%, from + 20% to + 8 from + 15% to + 3%). As recently as 2016, the price differentials between Italy and the Euro Area fluctuated in the various classes between + 20% and + 30% (with the exception of the last class that remained at + 10%). **The decrease in the positive differential with the Euro Area as regards the charges and taxes component** for the first three classes was even more significant, ranging between 60% and 30% in 2019 and this time between 40% and 15%; for the other three classes, where the differential is negative instead, there was a marked widening of the relative advantage (-30% for the IE class and -61% for the IF class, against -3% and -36% in 2019).

Turning to the comparison with the major European countries, **the average Italian prices before charges and taxes continue, as they have been for years, not to be the highest among the main European countries.** The industrial electricity consumers in our country **pay cheaper prices than their German counterparts**, with negative differentials widening significantly compared to 2019, up to -33% and -43% for the IE and IF classes (-8% and - 20% in 2019).

ELECTRICITY: RENEWABLES STABLE, WIND -7.4%, SOLAR + 5.3%. CONSUMPTION AT 284 TWH (-6%) IN ITALY, HALF OF PRODUCTION FROM GAS (49%).

In 2020, electricity consumption (284 TWh) decreased by -6% (-1% in 2019), mainly due to the extraordinary pandemic situation that occurred during the year.

The downturn affected all consumer sectors, especially the service and industrial sectors, with the exception of domestic where consumption increased by + 2%.

Domestic demand was covered 90.2% (88% in 2019) by Italian production, with the remainder coming from abroad, the lowest low level for the past twenty years. Imported energy decreased by 9.5%, while exported energy, although still at a fairly limited volume, also increased in 2020 (+30%).

In 2020, gross national electricity production in Italy was 281.5 TWh (-4.2%), compared to 293.9 TWh in 2019. The extraordinary pandemic event resulted in a downturn from the previous year, where there was a recovery in production (+ 1.4%), compared to the decrease of about 2% in 2018.

Thermoelectric power generation fell from 176.17 to 163.54 TWh (-7.2%), while renewables were slightly up overall, despite a 7.4% drop in wind power generation and a 0.8% drop in geothermal energy. Solar energy production, in particular, recorded an increase of 5.3% compared to 2019 when production from this source was 4.6%.

41.2% of the energy demand on the grid was met by production from renewable energy sources (renewable hydroelectric, wind, photovoltaic, geothermal and biomass), recording a value of 116.05 TWh (+1.3% compared to the previous year).

Enel's share of production was 15.8% (17% in 2019).

Eni was once again the leading operator in thermoelectric generation, as it was for the first time in 2019, having had a higher output than Enel, albeit with a smaller installed power. **The amount of incentivised electricity remains unchanged at 62 TWh, for a system cost that is also stable at 11.5 billion euros.**

ELECTRICITY: 54.3% OF DOMESTIC CUSTOMERS HAVE CHOSEN THE FREE MARKET. THE NUMBER OF SUPPLIERS, AT 739, IS STILL GROWING (+16 UNITS COMPARED TO 2019).

The total number of delivery points remained essentially unchanged (-0.2%) at just under 37 million, of which 29.8 million are domestic and 7.1 million are non-domestic.

In the context of domestic customers, residences account for 80% of the delivery points and 87.8% of consumption. Power up to 3 kW remains the most common type of contract among domestic customers (71.4%), but this is down on the previous year (71.9%), which can be attributed to a greater need for power linked to lockdown periods.

In 2020, the household switching (change of supplier) rate remained at 2019 levels (approximately 13%). Looking at the end-market sales data, **54.3% of domestic customers are in the free market** (up from 49.3% in 2019). The difference in average consumption between households in the free market, averaging 2,109 kWh/year, and in the standard offer market, 1,886 kWh/year, rose slightly, due to an increase in average unit consumption at standard offer market delivery points (0.9%) that was lower than that at free market delivery points (2.2%). On the supply side, **the number of suppliers on the retail market grew, albeit slightly, in 2020 (+16 units in the free market), reaching 739 operators**, confirming a growing trend that has continued unabated since liberalisation in 2007. **The dominant operator of the entire Italian electricity market remains the Enel Group, with a slightly downward trend this year, from 36% in 2019 to 35.6% of energy sold, followed at a great distance by Edison (increasing to 5.9%) and A2A (at 5.5%). Overall, the top five operators account for 80% of the domestic sector (82.5% in 2019)**, although overall, compared to 2018, the level of market concentration remains stable, with the share of the top three operators increasing from 46.8% to 47% of total sales.

In terms of average final price (net of taxes), the standard offer market has lower price values than the free market, with a difference of -23.6%.

Compared to the previous year, there was a generalised increase in the differentials between the two markets, stemming from their differing development. The free market has values almost equal to the previous year, while the standard offer service decreased by 20% on average. This reduction reflects the sharp drop in prices on wholesale markets that occurred in 2020, partly as a result of the spread of the pandemic.

On the other hand, the free market, where contracts at a fixed price for a predetermined period predominate, has passed on reductions to customers to a lower extent.

GAS

GAS: RECORD COLLAPSE IN GLOBAL DEMAND DROP IN GAS PRICES DUE TO COMPETITION, WEAK DEMAND AND LOWER OIL PRICES. DECREASE IN GAS SUPPLY AND DOWNTURN IN LNG IMPORTS

World gas demand in 2020 experienced an unprecedented contraction of -2.5%: in Europe, the decline was -3.1%, in the U.S. 2.3%, while China saw a 5% increase. Of the major European countries, the United Kingdom's consumption contracted by 6.3 billion cubic meters, Spain's by 3.7 billion cubic meters and Italy's by 3.4 billion cubic meters.

In 2020, international gas prices declined sharply due to the combined effect of a worldwide contraction in demand, a significant reduction in oil prices, and increased competition. This drop follows the reduction already seen in 2019 due to the high abundance of LNG.

The LNG trade recorded growth for the seventh year in a row, albeit modest. On the supply side, in 2020, OECD natural gas production contracted by 32 billion cubic meters from the previous year to 1,541 billion cubic meters.

The European Union (EU 27) reduced the coverage of consumption by domestic production from 15.1% to 11.8%. Among the main suppliers of LNG to OECD Europe, Qatar and Nigeria recorded the greatest decline in exports to the Continent, partially displaced by the USA, which increased by 40% compared to 2019.

LNG imports from Europe (third largest in terms of volume) declined by 5% due to lower economic activity caused by the pandemic and full stores that led to cargo cancellations in the second half of the year.

LNG prices around the world reached new all-time lows during 2020, due to a combination of reduced demand caused by the pandemic and oversupply caused by the deployment of a new production and export infrastructure, as well as the drag exerted by low oil prices, to which most contracts are tied in price formation. **2020 will perhaps be remembered as the year of volatility:** in fact, the variability during the year was very high, at \$31.5/kWh for Asian prices and \$15.2/kWh for South-West European prices.

GAS: IN 2020 CONSUMPTION FELL TO 68.5 BILLION CUBIC METERS (-4.2%) AND PRODUCTION TO -16.1% IN ITALY THE SHARE OF IMPORTS DECREASED TO 93.2%. THERE WERE FEWER IMPORTS FROM RUSSIA WHILE IMPORTS FROM ALGERIA INCREASED

In 2020, **net natural gas consumption decreased by 3 billion cubic metres to 68.5 billion cubic metres (down 4.2% from 2019).**

Industrial sector consumption fell by 2.2% and thermoelectric generation consumption by 3.1%. 'Trade and services' is the sector that has suffered the most from the various containment measures adopted to slow the spread of the virus (down 12.1% from 2019).

For the same reasons, gas consumption linked to transport also showed a substantial drop, equal to -15.7%, while consumption in the domestic sector fell by -2.8%, due to favourable weather trends.

In 2020, domestic production plummeted -16.1%, the most in the last decade. A total of 4.4 billion cubic meters of natural gas was extracted: 2.4 billion from the sea and 1.99 from gas fields on land. The decline mainly involved offshore fields, whose production fell by 17.5% compared to the previous year, while onshore fields extracted 3% less.

Italy's degree of dependence on foreign supplies decreased to 93.2% (95.4% in the previous year). Eni controls 71.6% of production, down from 75.2% the previous year.

In 2020, Italy imported 4.7 billion cubic meters of natural gas less than in 2019: in fact, **gross imports** dropped to 66.4 billion cubic meters, a **decrease of 6.6% compared to 2019. Greater use was made of gas stores** and at the end of the year withdrawals were more than 1 billion cubic meters higher than injections. 1.8 billion more cubic metres arrived in Italy from Algeria than in 2019 (+13%). A similar rate of increase was recorded for Norway, from whom we imported a volume 0.8 billion higher than the previous year. The positive change in gas from Qatar was smaller, at 6%. In contrast, in 2020 we imported: 4.1 billion cubic meters less from Russia, 1.2 billion less from Libya, 0.8 billion less from Holland and 1.3 billion less from other areas. **Russia's weight among the countries exporting to Italy decreased to 42.9% (it was 46% in 2019), while Algeria's share rose to 22.8% from 18.8%. The third most important country is Qatar where 10.5% of the total gas imported to Italy (9.2% in 2019) comes from, followed by Norway with a share of 10.4% and Libya with a share of 6.7%. The proportion of imports from Northern Europe (i.e., Norway and Holland combined) did not decrease, but actually rose from 11.1% to 11.8%. 8.8% of the total gas procured abroad, i.e. approximately 5.5 billion cubic meters, is purchased on European Exchanges.**

Eni remains in first place among importing companies, with a market share of 47.6% (47.1% in 2019). The significant reduction in Eni's imports (down 8.8%) is slightly less than the reduction in total domestic imports. **Together, the top three importers supplied 47.4 of the 62.4 billion cubic meters imported, i.e. 76.1% of the gas that entered the Italian market (78.1% in 2019).**

GAS: 468 ACTIVE COMPANIES STILL ON THE RISE. MARKET CONCENTRATION FALLS. MORE THAN 60% OF HOUSEHOLDS ARE IN THE FREE MARKET

In the sales sector, out of a total of 468 active companies (- +22 compared to 2019) only 29 (6.2%, down from 6.7% in 2019) sold more than 300 million cubic metres, covering 82% of all gas purchased on the retail market.

In 2020, **concentration in the end sales market decreased**. The top three groups control 43.7%, while in 2019 the share was 44.3%. Looking at the top five groups, the portion of the market served drops to 53.8% (down from 54.4% in 2019). In fact, the Eni group's share decreased by one percentage point compared to 2019, from 19.4% to 18.4%, with the group's sales dropping by more than one billion cubic meters (-9.5%). The gap between Eni and Edison, and the gap between Edison (second supplier) and Enel (third supplier) narrowed slightly compared to 2019. In particular, the gap between the Eni and Edison groups fell below 5% (6% in 2019).

In 2020, the share of households purchasing gas in the standard offer service fell to 39.6%; in 2019 it was 44.1%, after falling below half (49.9%) for the first time in 2018.

The number of customers who switched suppliers in the 2020 calendar year was 2.2 million, with a switching percentage totalling 10.1% (corresponding to a 10.2% portion of the total - 9.1% in 2019), **or 20.4% (previously 27.1%) when assessed based on the consumption of customers who switched.**

Compared to 2019, the percentages are increasing for domestic customers. In 2020, domestic consumer switching grew by one percentage point, confirming and indeed increasing the already significant dynamism seen since 2018, after a number of years in which it had eased somewhat.

GAS: HIGHER PRICES THAN EU AVERAGE FOR ALL DOMESTIC CUSTOMER CONSUMPTION BRACKETS, BUT GAP WITH THE EURO AREA DECREASES FOR HIGH CONSUMPTION BRACKETS

Natural gas prices for Italian domestic consumers in 2020, including charges and taxes, were also higher than the average Euro Area price for all consumption classes. For the first consumer class, in particular, there was a slight decrease in gross prices, but not enough to substantially alter the gap. With consumption of less than 520m³/year, mostly being used for cooking and hot water purposes, the positive differential compared to the Euro Area increased to +7%, from +10% in 2019 (the first time this class was cheaper, both gross and net of charges and taxes).

For the other two classes with the highest consumption, which traditionally had positive differentials, the gaps with the average gross prices of the Euro Area nevertheless decreased compared to the previous year, which had already occurred in 2019: for consumption class D2 (520- 5. 200 cubic metres per year), which is also the one with the largest share in total household consumption (71%), the differential was, in fact, +13%, compared to +15% recorded in 2019; for class D3 (over 5,200 m³ per year, mostly central heating) the value was, instead, +15%, compared to +19% in the previous year. **Similarly, the charges and taxes component recorded a slightly lower positive differential for the last two classes and a contraction in the negative differential for the first class. This outcome is the result of net price dynamics which, for Italy, have seen a year-on-year decrease for all three classes.** Moving on to a comparison with the main European countries, **the Italian price for the lowest consumption class, including taxes, is the highest, only lower - as in the past - than the French price.**

In the second and third consumption classes, Italy maintains the highest prices compared with all other countries, respectively 85.93 c€/m³ and 74.13 c€/m³, with differentials improving with respect to other countries except for Spain and limited to the second class (where the differential rose from -3% to +1%).

GAS: HIGHER PRICES FOR ALL INDUSTRIAL CUSTOMER CLASSES, BUT IMPROVED DIFFERENTIALS COMPARED TO PREVIOUS YEARS

In recent years, industrial companies belonging to the three classes with the highest gas consumption have benefited from gross prices that are more advantageous than the average prices in the Euro Area, with negative differentials on a downward trend, at least until 2018, while prices for the first classes were higher, with substantially stable differentials. Compared to the relative decline in 2019, the class with the highest consumption (i.e. with annual consumption between 26 and 104 million cubic meters) maintains a positive differential of +2%, while for the previous two classes, the negative differential widens again (from -5% in 2019 to -9% and -8%,

respectively). There was also an improvement for the two lowest consumption classes (up to 260,000 m³/year), with the differential contracting again, from +18% to +14% and from +6% to +1%.

WATER SERVICE

WATER: 15.5 BILLION EUROS IN INVESTMENTS ACTIVATED. 98% OF PLANNED INTERVENTIONS CARRIED OUT

During the year 2020, the overall legislative and regulatory framework within which the Authority has set its measures has been deeply affected by the effects of the COVID-19 pandemic. In this context, **the approvals of tariff proposals for the four-year period 2020-2023, involve 84 utilities serving 36,817,534 residents. Compared with the previous year, the average change in fees charged to users was 1.97%.** This confirms the substantial stability of user tariffs, despite the ongoing process of improving the quality of the integrated water service.

With reference to the third regulatory period, the intervention programmes submitted to the Authority lead to the quantification, for the four-year period 2020-2023, of an **expenditure for investments to be financed through tariffs, in per capita terms, equal to 224 €/inhabitant nationally**, with higher values in Central Italy, equal to 286 €/inhabitant. **Also considering** the forecasts regarding the availability of **public funding** for the construction of water infrastructure, the investments planned for the four-year period 2020-2023 are, **in per capita terms, equal to 261 €/inhabitant nationally**, with the highest value, conversely what was presented in previous editions, in Central Italy (322 €/inhabitant).

Investment spending, in absolute terms, including the availability of public funds, amounts to 15.5 billion euros for the four-year period (corresponding to approximately 3.9 billion euros in each year of the four-year period). In particular, from the analysis of the data, it appears that in the face of a progressive improvement in the indicators required by technical quality regulations, the competent bodies have planned investments for the period 2020-2021 **that are around 13% higher than those planned for the previous two years.** The checks carried out showed general improvements in the capacity to carry out planned investments. **The national average implementation rate for 2018 was 97.9% and for 2019 it was 97.8%.**

WATER: AVERAGE EXPENDITURE FOR THE TYPICAL 3-PERSON HOUSEHOLD € 317/YEAR. ACQUEDUCT LEAKAGES AT 41.2% (LARGEST EXPENDITURE ITEM FOR INVESTMENTS).

With reference to a sample of 85 operators (which provide the service to approximately 35 million inhabitants), it is noted that, for the year 2020, **the average annual expenditure incurred by a typical resident domestic user (family of 3 people, with annual consumption equal to 150 m³), amounts to 317 euros/year nationally**, with a lower value in the North-West (244 euros/year) and higher in Central Italy (380 euros/year). In the latter area the relevant entities have planned a higher per capita expenditure for investments to be financed through tariffs for the period 2020-2023. **This expenditure is made up, on average, of aqueduct service fees at 39.6%, sewerage and purification services at 12.8% and 29.6% and the fixed fee at 9% and taxes (VAT) at 9%.** As regards one of the main indicators of technical quality, that of "Water Leakages", in 2019 (the last survey of the infrastructure) there was a value of linear water leakages (calculated by relating total leakages to the length of the network, indicator M1a) averaging **22 cubic meters/km/day**, as well as an average value of **percentage water leakages** (M1b indicator, calculated by relating total leakages to the total volume entering the aqueduct system) **equal to 41.2%** (from over 43% in 2018). Leakage values are lower in the North and average values are higher in the Centre and in the South and the Islands, where slightly less than half of the water resources injected into the aqueduct systems are lost.

The existence of a water service divide in the country was seen once again, with technical parameter values that generally tend to show greater problems in the South and the Islands.

The analysis of investment requirements (gross of contributions) for the period 2020-2023 at the national level confirms the concentration of operators' efforts to contain the level of water leakages, which is therefore a priority objective in the planning decisions of the governing bodies of the area.

Overall, resources allocated to leakage improvement works made up about 21% of the total sample requirement for the 2020-2023 period. This was followed by investments to improve the quality of purified water and to upgrade the sewerage system (in particular with a view to minimising flooding and sewer overflows), which stand at 16.6% and 15%, respectively, while the weight of interventions aimed at reducing water shortages grew, reaching 14.5% of total requirements.

WASTE

WASTE: OVER 7,400 OPERATORS. GOVERNANCE FRAGMENTED INTO 3523 BODIES. THE TARIFF METHOD COVERS OVER 48 MILLION INHABITANTS

The process of approving the tariff arrangements for 2020 was strongly affected by the emergency measures introduced by the legislator, with particular reference to both the succession of extensions of the terms for approving TARI 2020, which became necessary due to both the serious health emergency and the exemption from the application of the provisions of the ARERA Tariff Method introduced by Legislative Decree no. 18/2020. **The Authority received approximately 5,500 tariff arrangements for the year 2020, which represent a total population of just over 48 million inhabitants (approximately 80% of the national population).** As of May 18, 2021, the tariff arrangements for the year 2020 already approved by the Authority concerned **84 tariff areas**, concerning 6,451,922 inhabitants (residing in 175 Municipalities and equal to 11% of resident inhabitants) for which **a very small average increase in tariffs was approved compared to the previous year, equal to 0.29%.**

As of May 2021, **7,470 entities are registered in the Authority's Registry of Operators**, with an increase of approximately 14% compared to the previous year, where 7,253 were registered as operators, 87.4% as public bodies and 12.6% as operators with different legal status. In particular, compared to the previous year, there was a significant increase (equal to approximately 62%) in the number of entities registered as territorially competent bodies (ETC). Confirming the complexity and fragmentary nature of the sector's governance, there is also a small number of government bodies (just under 60), compared to a very high number of **territorially competent bodies (3,523)**, which in 98% of cases are the municipalities themselves.

WASTE: SERVICE FRAGMENTATION, MULTIPLE OPERATORS IN THE SAME MUNICIPALITY. UNEVEN PERFORMANCE ACROSS PARTS OF THE COUNTRY

Data collection on the quality of the integrated municipal waste management service has also been completed; the analysis was conducted on a **panel of over 4,000 operations and operators, which provided the service of tariff management and user relations to 57% of the national population (over 34 million inhabitants).** In general, there is greater participation in data collection by these operators than by managers of waste collection and transport services and street sweeping (700 operators for around 2,000 operations, equivalent to 61% of the national population). Furthermore, unlike waste collection and transport and street sweeping - for which in-house management is prevalent (38% of the panel's operations), followed by assignment through tender (28% of operations) and by state-run operations (16% of operations) - **in almost all cases tariff management and user relations is carried out directly by the Municipality**, which is why there is a one-to-one correspondence between operator and operation. The operations located in Northern Italy cover almost 30% of the national population, while Southern Italy (including the Islands) barely reaches 15%.

DISTRICT HEATING:

DISTRICT HEATING: THERE IS STILL A STRONG CONCENTRATION IN NORTHERN ITALY

The growth trend of district heating and cooling remained stable, in terms of the numbers connected and extension of the networks. The service remains concentrated mainly in northern and central Italy: Lombardy, Piedmont, Trentino-Alto Adige, Emilia-Romagna and Veneto alone account for more than 95% of the thermal energy supplied.

Natural gas is confirmed as the clearly predominant energy source for the operation of district heating plants, accounting for 69.4% of total energy consumption, down slightly from the previous year. A significant contribution is also provided by residual municipal waste, accounting for 15.1% of the energy sources used, and bioenergy (biomass, biogas and bioliquids) which, representing 9.9% of the total, lead the growth of renewable sources. When it comes to generation technologies, a clear prevalence of electricity and heat cogeneration plants has been confirmed, which produced 67.6% of the thermal energy fed into the networks.

The number of companies operating in the district heating sector registered in the Authority's Registry is 259. Of these, 84% are involved, usually in an integrated manner, in activities closely linked to network operation and the supply of thermal energy to users (distribution or measurement or sale), while the remaining percentage is only involved in the production of thermal energy. **The energy distributed by district heating networks is mainly used for indoor air conditioning (heating and cooling) and the production of hot water for sanitation purposes**, while its use in industrial processes is marginal. A significant share of the market is in fact made up of **residential and tertiary users (64% and 33.8% of the total, respectively)**, while demand from the industrial sector remains marginal (2.8%).

As regards **the price applied**, the analysis carried out showed it to be between approximately 68 and 106 €/MWh, with an **average value of 89 €/MWh for residential users**; for users in the tertiary sector, between approximately 66 and 105 €/MWh, with an average value of 85 €/MWh, while for industrial users, between approximately 62 and 105 €/MWh, with an average value of 80 €/MWh.