ENERGY OUTLOOK

Year VI n°18 - October 2021

Macroeconomic and Commodities Outlook

Osservatorio energia

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The Italian economy positive performance in Q2 and Q3-21 led to an upward revision of growth perspectives for year 2021 to +6.0% y/y ahead of a 4.0% and 2.4% y/y for years 2022 and 2023 respectively, led by domestic demand. How the European funds are invested and how effectively is seen as key for growth sustainability in the medium-term. Energy prices led inflation is not seen as structural for now.

Oil and Coal prices may remain supported in winter, with the Asian demand supporting and supply issues adding to the market tightness. This is expected to normalize into spring though.

An upward revision to this and the next two years average price targets for the ETS CO_2 follows the recent commodities upward acceleration and the ETS stabilization above the 50 €/ton threshold, with the economic competitiveness of the average efficiency gas fired combined cycles plants compared to the average efficiency coal ones restored both in year 2022 and 2023.

FRAME OF REFERENCE AND METHODOLOGY

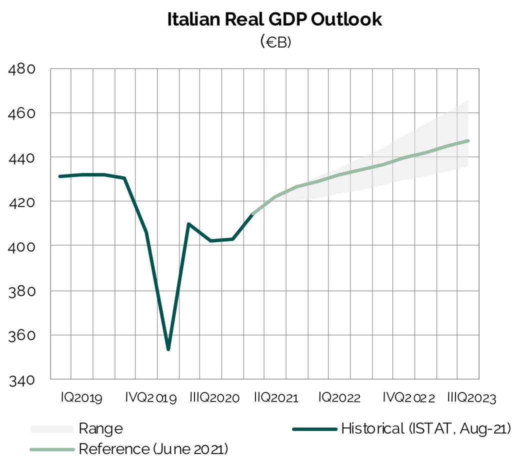
REF-E Energy Outlooks are elaborated by REF-E experts on the base of proprietary suites and market knowledge. Econometric and structural models, as well as our expert sensitiveness, detailed knowledge of regulation, and accurate monitoring of market outcomes underlie our elaborations.

A **Reference** scenario is built to represent the highest probability market equilibrium given the BAU conditions and most likely evolutions of the underlying assumptions (such as known market developments or approved regulatory improvements). In a short-term perspective, our **High** and **Low** scenarios are respectively characterized by tightening and loosening market conditions (temperatures and climate, market congestions, etc), expected to drive the commodity prices higher or lower. As of macroeconomic perspectives, higher or lower than normal domestic demand growth, final consumption, investments of the European funds move the GDP outlook towards the Low or the High scenarios.

MACROECONOMIC OUTLOOK

Firm Year 2021 Growth in Italy Partially Anticipates 2022 Expected Recovery

A successful vaccination campaign so far and the progressive removal of COVID-19's restrictions sustained a faster than expected recovery in the service sector over Q2-21, driving the cumulated GDP yearly growth over the first semester of the year at 4.7%. High frequency indicators point to a positive performance for Q3-21 too, implying an upward revision of our expectations for 2021 GDP growth to +6%, just above the upper range of our previous outlook (+5.7%). Consensus forecasts now see the GDP back to pre-crisis level by the first half of 2022.



Source: REF-E elaborations and forecasts (Oct-2021)

The 2021 Italian GDP growth was revised upward to reflect the positive performance observed for the economy in Q2 and Q3 2021. Under the Reference scenario, GDP is forecasted to record a 6.0% yearly growth in 2021, followed by 4.0% and 2.4% increase in 2022 and 2023, respectively. Domestic demand remains the major driver of short-term economic resumptions, with the effectiveness in the investment of the European fund and the intensity of final consumption restart potentially moving the GDP outlook towards the Low or the High scenarios. Price pressure remains sustained, pushing our Reference scenario inflation forecasts at +1.9% in 2021, fuelled by the energy prices rally. International prices dynamics and the economic strengthening should add support to prices in 2022 and 2023.

The Risks Pending on Economic Recovery

The **pandemic evolution** still weighs on the World GDP prospects. **Rising energy prices and row material shortages**, due to a mismatch between supply and demand recovery, may limit manufactory output. This also fuels inflation, enhancing the risk of a tightening of financial condition and of negative effects on families' disposable incomes, at least in the short term.

Domestic consumption remains the main driver of economic restart, although part of the **extra-savings** cumulated during the lockdowns may take time before being re-injected into the economy. The removal of restrictions partially weakens the propension to save. The pandemic led in fact to a high level of inequality, with a concentration of wealth in high-income families to which corresponds a lower marginal propensity to spend. A lack of measures aimed at reducing inequality may hence play against a complete return of the extra-savings to the economy. Families may also continue to save for precautionary reasons, with expectations for an increase of the fiscal burden to pay the pandemic related high public expenses being a possible one.

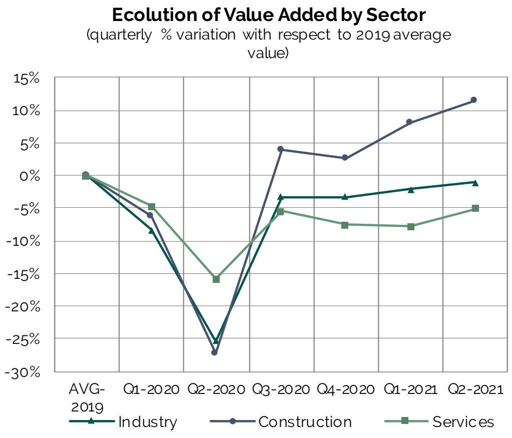
In Italy, Q2-21 showed encouraging results for consumption, with a 5% increase in the domestic expenditure for final consumption and a 4-percentage points contraction in the propensity to save (at 13% in Q2-21), with respect to the previous quarter. The path towards a return to pre-pandemic consumption behaviours is still uncomplete and uncertain, though, as consumer spending was still near 8% below pre-pandemic levels.

Finally, public stimulus measures and favourable financial conditions are currently sustaining **investments**. The Italian government will have to effectively invest the roughly 200 billion of European Funds and implement all the promised reforms and bureaucracy simplifications by

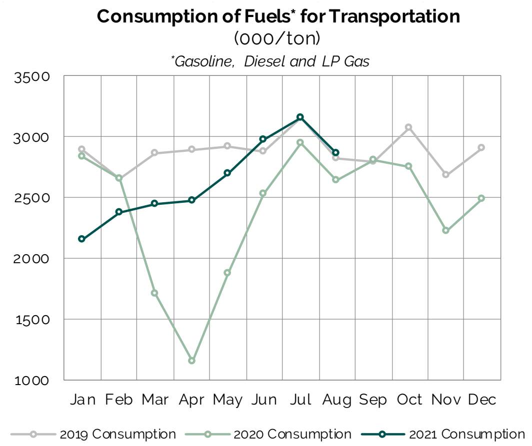
2026 to set the Italian economy on higher growth trends in the medium and long term, though.

Q2 and Q3-2021 Results Point to a Consolidation of the Italian Economic Recovery

In Q2-21, the Italian GDP rose by 2.7% quarterly, supported by a positive performance of all major sector aggregations. **Services** contributed the most to the latter up-move, recording a 3.0% quarterly increase in the value added and moving more than 10 billion euros (86%) of the quarterly increase in the expenditure for final consumption. Higher frequency indicators, including tourism flows, confidence indexes and fuels' consumption in the transportation sector, suggest that services' contribution should remain supportive in the third quarter.



Source: REF-E elaborations on ISTAT data (Oct-2021)



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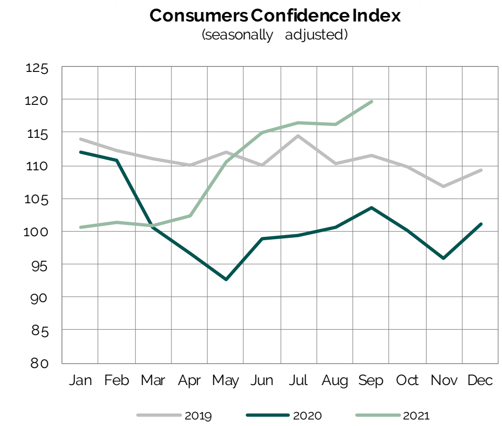


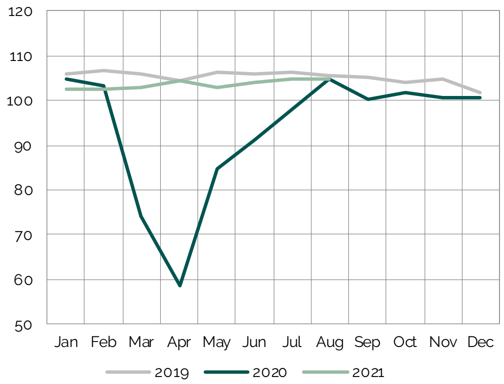
Source: REF-E elaborations

Public support measures proved to be effective in supporting **construction activities**, driving the sector value added in Q2-21 more than 10% above 2019 levels. The construction sector performance is expected to remain robust in the short term, with fiscal incentives supporting the sector having been extended to 2023.

The **industry sector** recorded a smaller improvement between the first and the second quarter of the year (+1.0%) compared to the other sectors. Higher frequency indicators for the third quarter confirm the persistence of a positive performance but continue to point to a larger contribution from the energy intensive industry. The IMCEI index (tracking the electricity consumption of about 530 energy-intensive companies) and the consumption of gas in the industrial sector are indeed aligned or above 2019 level since the second quarter of the year, while the industrial production index, despite showing signals of recovery, remained below pre-crisis levels throughout the year.

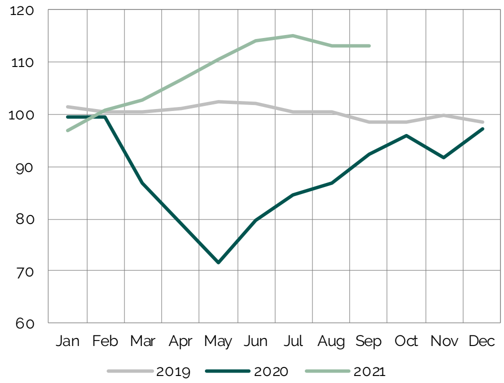
Manufactory may also be exposed to the risk of supply shortages. Surveys in the Italian industry sector are indeed signalling rising concerns on the availability of production inputs. However, as opposed to other European countries, the Italian industrial sector seems to be experiencing low pressures from input shortages.

Italian Industrial Production Index
(seasonally adjusted)



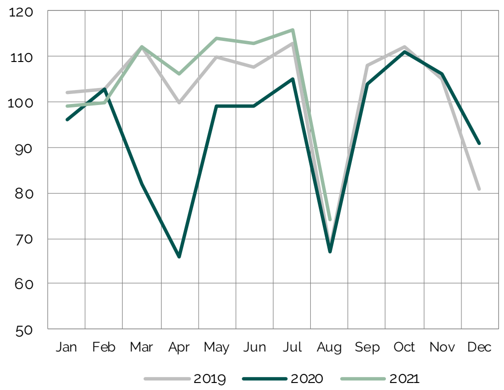
Source: REF-E elaborations

Manufactory Confidence Index
(seasonally adjusted)



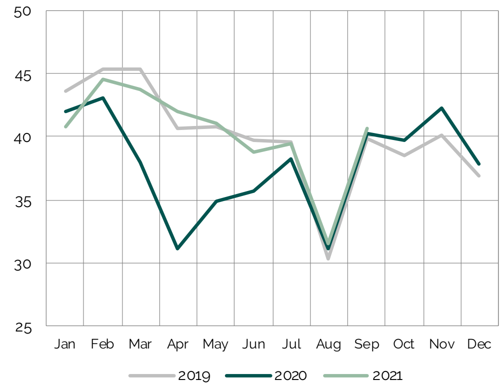
Source: REF-E elaborations

IMCEI Index for Electricity Industrial Consumption (no calendar adjustment)



Source: REF-E elaborations

Gas Average Daily Industrial Consumption
(Mmc - weekdays only)



Source: REF-E elaborations

The Labor Market Shows the First Signals of Rebound

The **labor market** started to show positive signals between the second and the third quarter of the year. In August, the number of people employed increased by more than 400 thousand units (+2.4%) compared to Jan-21, with more than half of the increase involving temporary workers (+8.2%), supported by the gradual re-opening of contact-intensive services and by tourism flows. The number of job seekers fell by 8%, despite the overall number of people working or looking for a job having recorded an almost 1% increase over the same period. The full-time equivalent job positions (FTE) grew stronger (+3.2%, between January and August) than the overall number of workers, in line with the progressive lifting of job retention schemes introduced in spring 2020 to limit the pandemic effects on the labor market.

The August unemployment rate declined to 9.3%, almost 1% lower than in Jan-21. The overall number of workers was still more than 400 thousand units below pre-pandemic levels though, with self-employed workers recording the largest gap (about 300 thousand units).

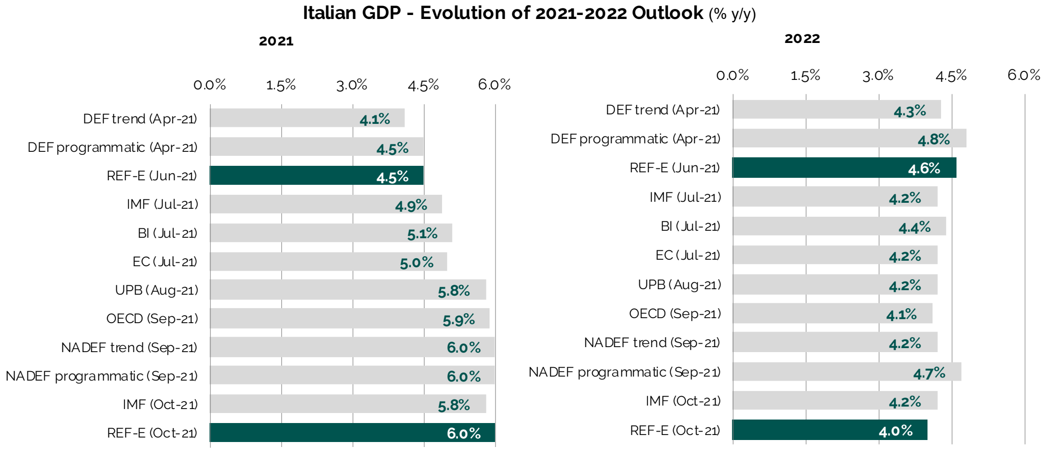
The rise in prices, mainly limited to energy products, was not reflected in wage dynamics yet, which potentially weighs on families purchasing power. Nevertheless, the gradual withdrawal of retention schemes is supporting disposable incomes of families previously exposed to wages containment due to the scheme adoption, partially offsetting the impact of price dynamics.

2021-2023 Demand Outlook: Vaccination Campains Accelerate the Recovery

The Italian GDP recovery was faster than previously expected. Under our Reference scenario we now see 2021 GDP 6.0% above 2020 level, with a quarter-on-quarter increase between 1% and 2% during the last two quarters of the year, supported by the still ongoing rebound of the services sector. From 2022, the GDP growth is expected to settle on a slightly lower quarter-on-quarter growth rate, driving our Reference scenario yearly increase projections for 2022 and 2023 to +4.0% and +2.4%, respectively. GDP should consequently be back to 2019 levels in the first half of 2022, closer to European growth rates.

The Reference scenario assumes domestic demand to drive the short-term recovery, with the gradual return of excessive savings to the economy and the strengthening of disposable income fueling final consumption. The Recovery and Resilience Plan (RRP) funds and other public incentive scheme, by sustaining investments, will add support.

The GDP forecasts may move towards the High or Low scenarios depending on the effectiveness in the implementation of the RRP's investments and reforms. Global economy dynamics are also key. Under the High scenario, GDP increases by 5.0% in 2022 and by 4.6% in 2023, while under the Low scenario, GDP growth is limited to a 2.4% and 20.0% yearly increase in 2022 and in 2023 respectively. A return to economic stagnation envisaged by the scenario Low risks to be sided by high prices, with international dynamics driving the economy towards stagflation.



Source: REF-E eleborations

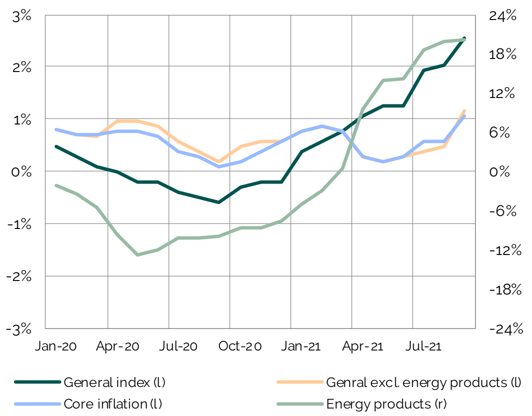
Inflation: The Energy Products Rally Continue to Push Prices

In September 2021, the cumulated yearly increase of the Italian Consumer Price Index (CPI) reached +1.3%, with a +2.6% year-on-year variation in September. Energy prices and row material shortages are the major drivers behind the latter increase.

The energy products price index recorded significant year-on-year increases throughout the year, peaking at around 20% in July and August. The comparison with 2020 lows contributed to the recorded movements, together with a mismatch in demand and supply recovery, disruptions affecting crucial supply sources, and political pressions. The European gas prices drove the energy sector dynamics (LNG and Natural Gas Market Outlook Oct-21). In September, both the TTF and the PSV gas prices settled at an average value more than 400% higher compared to the previous year level, with a prompt impact on the electricity price (+225%, with respect to September 2020), on which also the surge of the CO2 price added pressure. The increase recorded at wholesales markets would have easily been transferred to final consumers energy bills, but the government intervened, both in June and in September, to limit the impact on families and business.

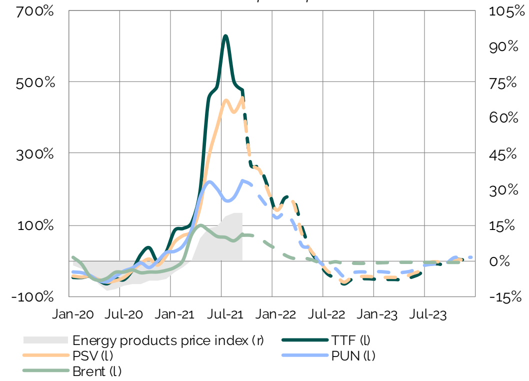
The average yearly increase in core inflation, excluding food, tobacco, and energy products, remained in fact limited to 0.6%, pointing to a still low transfer of rising energy prices on other products and a weak price dynamic arising from other sectors.

Inflation Indexes (% y/y)



Source: REF-E elaborations

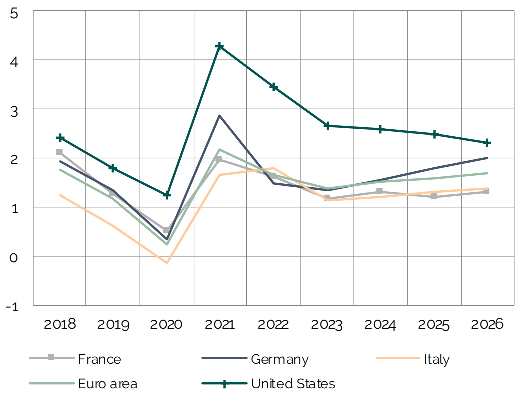
Year-on-Year Evolution of Monthly Energy Prices and Energy Price Index (% var)
**Historical data up to September 2021*



Source: REF-E elaborations and forecasts (Oct-2021)

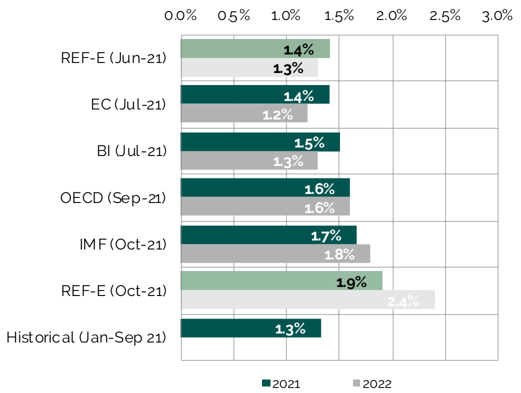
Under our Reference scenario, energy prices should remain sustained throughout the winter, supporting prices increases over the next months. Based on these assumptions, we see prices to average 1.9% higher in 2021 compared to 2020, and then to record a year-on-year increase above 2% over the following two years, as the economic recovery and the international price dynamics will support further.

Yearly Evolution of CPI - IMF (Oct-21)
(% y/y)



Source: REF-E elaborations

Italian CPI Outlook (% y/y)



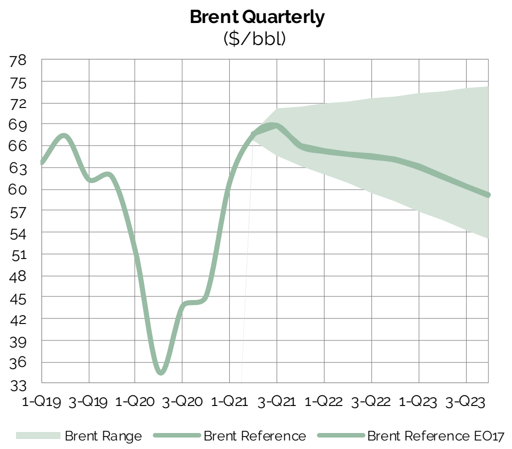
Source: REF-E eleborations

On a Global perspective, Central Banks and major research institutes continue to see the inflation surge has a temporary dynamic, fueled by the restart of economic activities after the lifting of containment measures for the pandemic control and by the timing mismatches in the recovery across sectors and countries. Prices are currently expected to peak in the remaining months of 2021 and then move back to pre-pandemic dynamics. Despite ongoing exceptional policy measures supporting the economic recovery, medium and long-term inflation expectations have generally not been revised. If this would not continue to be the case, Central Banks may consider reassessing accommodative monetary policies ahead of time, tightening financial markets conditions and weighting on the economic recovery. High inflation may also worsen inequality, since low-income families, relying more on labor income, risk to be more strongly hit by the rise in prices. The latter may depress the restart of private spending, weighting further on economic activity.

The inflation threat for the Italian economy is limited compared to other European countries and the United States. Expectations on the Italian average prices evolution remain below the euro area prospects consequently.

COMMODITIES OUTLOOK

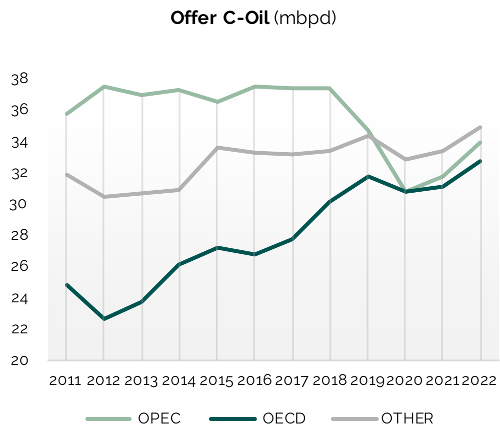
Oil prices still supply driven in the short term



Source: REF-E elaborations

The Reference 2021 Brent average was revised to just above 68 $/bbl. A 3 $/bbl upward revision compared to our previous update follows the recent overall fuels rise. This is expected to impact the beginning of year 2022, which is therefore projected just below 70 $/bbl. The Low scenario materializes in the event of an OPEC Plus fracture and/or an economic recovery failure, while the High one is driven by both a stronger than expected demand growth and a more incisive direction towards a green transition of the Democratic Administration in the United States, which may weigh on supply growth.

Despite the recent **OPEC Plus** decision to stick to the existing pact for a gradual increase in oil output (the monthly overall production will be adjusted upward by 0.4 Mb/d for the month of November 2021) being blamed for the latest upward acceleration, the EIA demand-supply projections for year 2022 show an overall balanced market. The above OPEC decision is justified by uncertainty about the impact on demand from variants of the coronavirus, which threaten economic growth and demand consequently, while the recent price up-move is seen as fuelled by short-term supply disruption factors, such as hurricanes that have hammered U.S. production, and low levels of investment across the industry during the pandemic peak.



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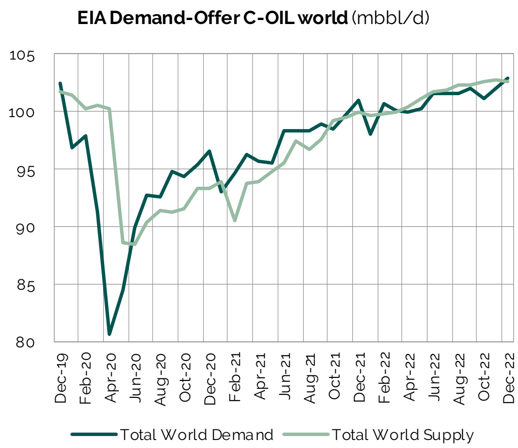

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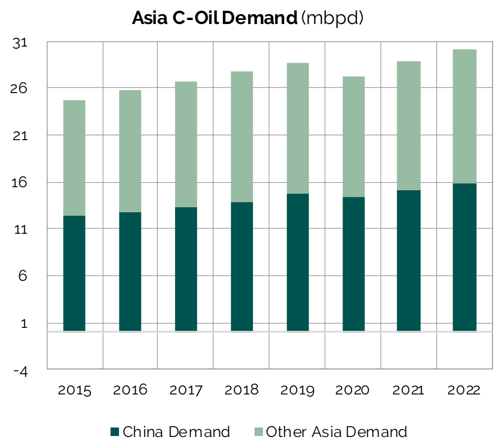
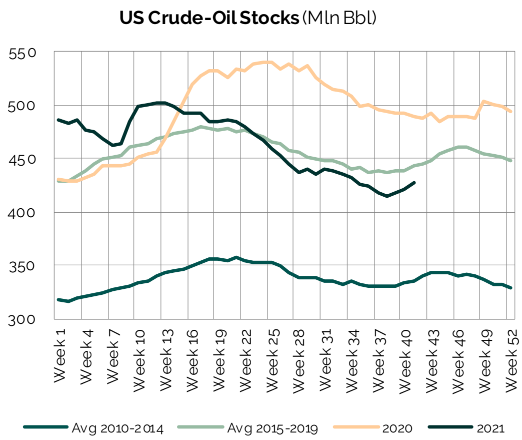


Source: REF-E elaborations

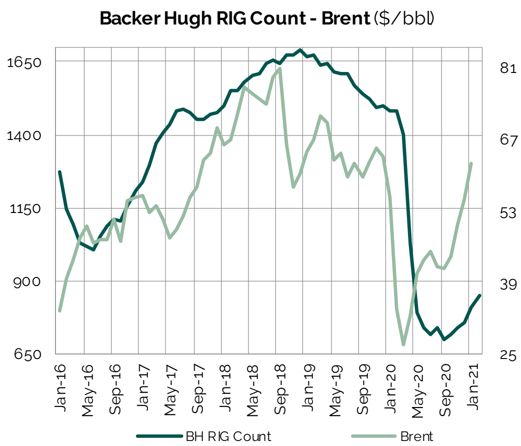
Compared to our previous update, the short-term supply projections are stable, with the Saudi production progressively coming back. The OPEC Plus and the OECD one is also resuming, which is still seen as likely to mitigate the overall energy sector upside potential towards the end of this year and in 2022.

One of the major supporting factors for the oil market following year 2020 was the **Chinese and overall Asian demand**, most of which for storage. This was favoured by the availability of storage in China from the strategic petroleum reserve (SPR) as well as the Chinese government protection of refinery margins when the oil price was below $40/bbl. In year 2021 Asia's demand is expected to settle 6% above 2020 to pre-pandemic levels. The Asian growth rate is seen as slowing to below 5% in year 2022 though, with some key uncertainty factors looming, such as the oil to gas switching in the power sector, India's economic growth stability and the diesel demand elasticity to prices. Moreover, in the very short-term, the recent power and coal supply crisis in China (see Coal market section below) could weigh on refinery use amid power rationing among independent refiners and on winter crude imports.

In a medium-term perspective, the OPEC Plus production come back is expected to proceed, with both Saudi Arabia and Russia facing fiscal issues encouraging production rump ups to gain market shares, especially if prices hold above the 60 $/bbl threshold.



Source: REF-E Elaborations

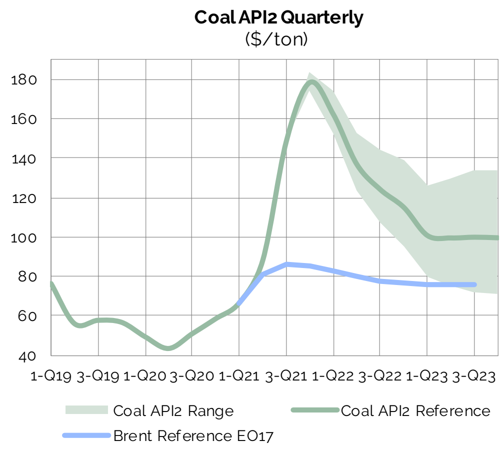


Source: REF-E Elaborations

Meanwhile a destocking trend of commercial OECD inventories is progressing specularly to the Chinese inverse process, with the US crude stocks now lower than the last five years.

However, a progressive move towards a structural rebalancing of the market is still expected over the coming years, with rising prices favouring a comeback of the OECD production and with drilling activity for exploration having resumed supported by rising prices.

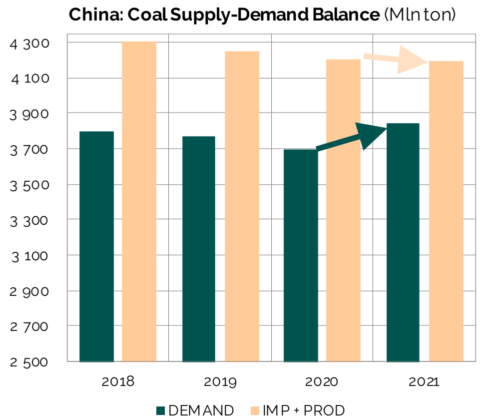
ASIAN SHORTAGES DRIVE THE COAL MARKET HIGHER



Source: REF-E Elaborations

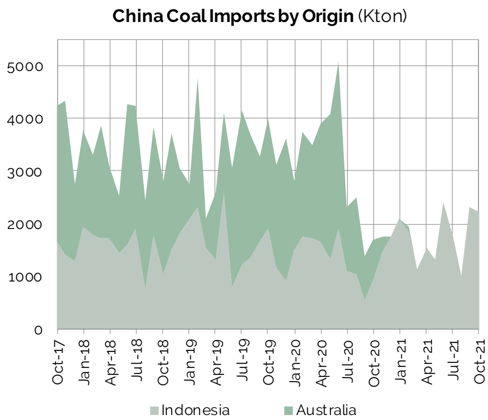
Both the 2021 and 2022 reference averages have been revised higher to 120 $/ton and 134 $/ton respectively, following the recent sharp gains. Market tightness may persist over the winter season ahead, with China still relying on Coal for power generation, imports from Australia banned and the expected internal production recovery looming. Market conditions should progressively normalize from the second half of year 2022 onwards though, in line with the overall expected normalization of the fuel sector worldwide. The *Low* scenario materializes in the event of the economic recovery slowing down and/or the decarbonisation process accelerating. The *High* one is driven by persisting commercial tensions, which may cause supply shortages.

Coal demand remained high last summer, driven by China's power shortages amid the combination of restocking (following a colder and longer than average winter across much of north Asia) and strong consumption from the power sector. With the Chinese economic recovery having accelerated more than expected, the industrial sector request for electricity met scarce imports generating a significant market tightness.



Source: REF-E Elaborations

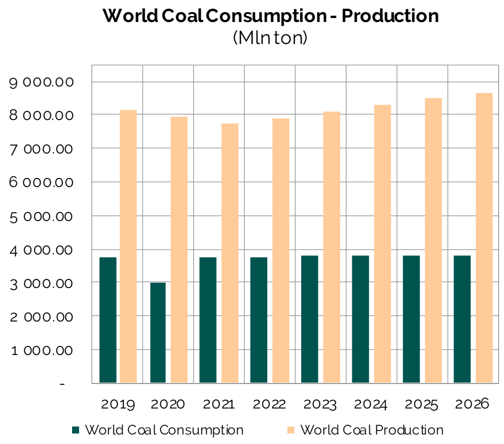
In fact, the progressive deterioration of diplomatic and commercial relationships between China and Australia, following the latter support on a call for an international inquiry into China's handling of the coronavirus, led to Australian products and row materials being significantly restricted and Coal imports being totally banned since Dec-20. As a result, total coal imports decreased 10% between January and August compared to Jan-Aug 2020.



Source: REF-E Elaborations

Source: REF-E Elaborations

Despite this year surge of Chinese coal consumption and overall Asian firm growth (together accounting for 65% of global coal demand)**, world demand projections still point to an overall slow recovery, while world production is seen as growing at an average 2% yearly rate** to reach 8.8 billion tons in 2025**.** This leads to a growing cumulated world surplus, which should bring the coal market back to normal conditions over the coming years.



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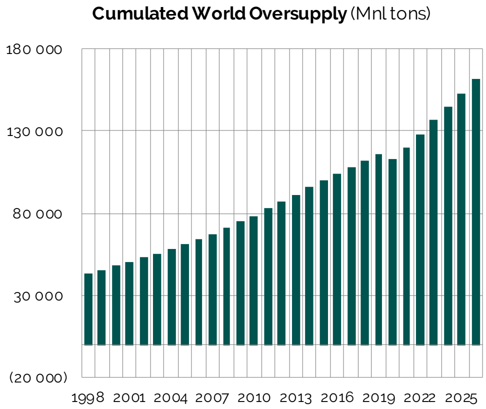
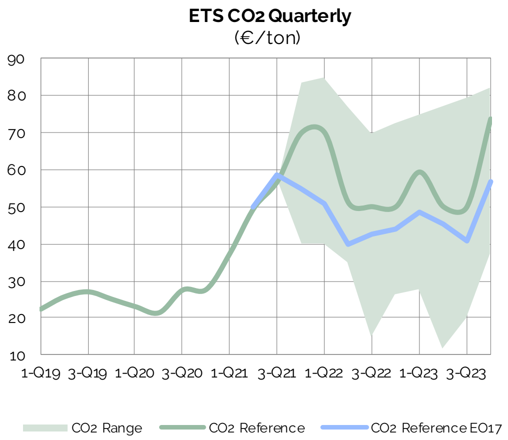


Source: REF-E Elaborations

Moreover, the supportive impact on demand by the economic recovery is counterbalanced and held back by the overall worldwide decarbonization process.

With the EU Parliament having approved the 2030 emissions reduction target at 55%, coal demand in Europe is expected to be progressively displaced by gas and renewables, which should limit the upside potential for the API2 European reference price. However, if the API2 maintains a strong correlation to the other references (such as the Australian, strongly correlated to the Chinese, and the South African API4), the possibility for prices to move significantly lower in the short-term will be limited too.

ETS CO2 GAINS NOT ENOUGH FOR THE SWITCHING



Source: REF-E elaborations

An upward revision to this and the next two years average price targets for the ETS CO2 follows the recent commodities upward acceleration and the ETS stabilization above the 50 €/ton threshold. This year average lies above 53 €/MWh, the 2022 and 2023 references above 55 and 58 €/ton respectively. The EU Commission commitment to reaching the 2030 55% emission reduction target keeps supporting a structural medium to long term upward trend. The short-term commodities and particularly gas market tightness added to the underlying positive bias, fuelling the upward momentum.

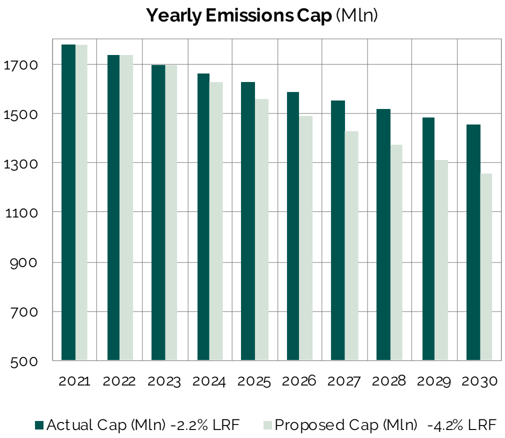
A particularly aggressive regulatory reform of the ETS System may lead to a *Green* Scenario, with the CO2 price averaging above 76 €/ton in 2022 and above 78 €/ton in 2023. The *Thermal* Scenario implies instead a failure to put in place a reform leading to a complete coal to gas switching.

The ETS CO2 market remains supported by a combination of factors such as: the 2021 to 2030 Phase 4 chick-off (implying, among others, the total number of allowances emitted being reduced by 2.2% each year), expectations for an overall reinforcement of the system led by the *Fit for 55* package of reforms, demand recovery and the generalized uptrend developed by fuels.

The regulatory framework is still formally unchanged. However, significant proposals aiming at reinforcing the system though a tightening of the ETS CO2 market balance are under scrutiny, following the publication in July of the *Fit for 55* package by the EU Commission. These are:

SUPPLY

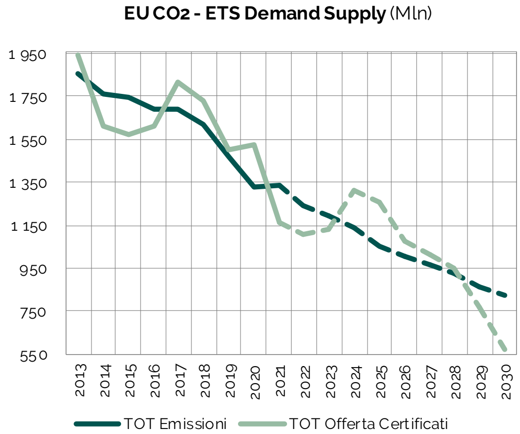
- ***Number of permits in circulation: one-off reduction by 117 million units***
- **Emission cap**: linear reduction of the permits distributed to market operators raised from 2.2% to 4.2%
- **Market Stability Reserve**: intake rate and minimum level of permits remains at 24% and 200 million respectively for the period 2024-2030 (previously planned at 12% and 100 million)
- **Free allowances**: gradual phase-out of free allowances to industries subject to carbon leakage risk form 2026 (10%/year until 2036). Free allowances will be replaced by a levy on EU imports in selected sectors, based on the carbon content of the goods (gradual introduction from 2023)



Source: REF-E elaborations

DEMAND

- ***Existing* mechanism *extended to other sectors:***
  - maritime sector (ships > 5000 ton) from 2023, with full implementation from 2026 (100% emissions for intra-EU voyages, 50% for extra-EU voyages, regardless of the ship flag)
  - Buildings, road transports and air conditioning will enter a dedicated ETS mechanism in 2025-2026



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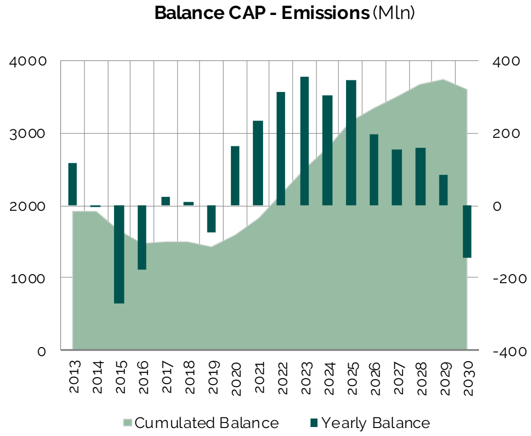
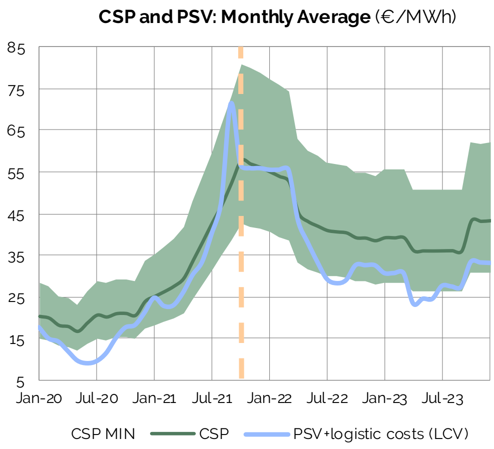


Source: REF-E elaborations

We assume the regulatory framework stability to maintain the ETS CO2 price on an upward path, with the downside seen as limited by psychological thresholds having previously worked as upside barriers. In this perspective, a progressively rising floor is imposed to our forecasting model *Reference* output, which is currently set at 50 €/ton.

CO2 Prices to Support the Coal to Gas Switching Again



Source: REF-E elaborations

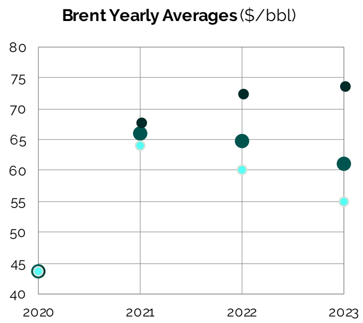
On the other end, over the last few months, the CO_2 price up-move failed to guarantee the coal to gas switching neither for the average efficiency thermal plants nor (over a few days) for the high efficiency gas plants versus the low efficiency coals. The ETS price should have moved, in fact, above 100 €/ton to prompt the average coal to gas switching last September. This, which may be seen as a misfunctioning of the system, is possibly due to the massive participation of financial operators to the market. As well as last spring expectations for the introduction of key reforms pushed the CO_2 price above what may be called the "switching fair value", uncertainty on the implementation process, profit taking on existing long positions and portfolio rebalancing operations possibly kept the price below it recently. Therefore, to consider the market historical performance, a progressively rising price cap has also been imposed to our forecasting model *Reference* output. This is set at 70 €/ton till the end of year 2023 but may be revised higher should market conditions change and/or regulatory changes emerge.

In our *Reference* scenario the combination of the CO_2 price stabilizing above 50 €/ton with a normalization of the gas market (LNG and Natural Gas Market Outlook Oct-21) is expected to restore the economic competitiveness of the average efficiency gas fired combined cycles plants compared to the average efficiency coal ones both in year 2022 and 2023. The switching from high efficiency coal plants to low efficiency gas plants will be guaranteed in the longer-term, should the CO_2 quotations move upward towards 70 €/MWh and the Italian gas price stabilize near 20 €/MWh.

COMMODITIES AND co2 YEARLY PROJECTIONS SUMMARY

Scenario		Brent ($/bbl)	Coal ($/ton)	CO2 (€/ton)
Reference	2021	69	120	54
	2022	70	134	55
	2023	68	100	58
High	2022	76	153	76
	2023	78	132	78
Low	2022	62	120	29
	2023	51	74	24

Source: REF-E elaborations



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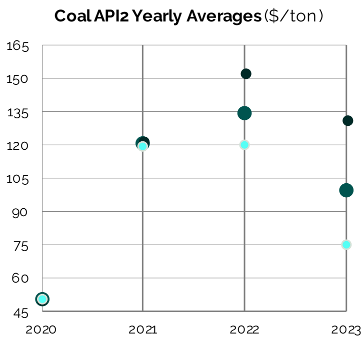

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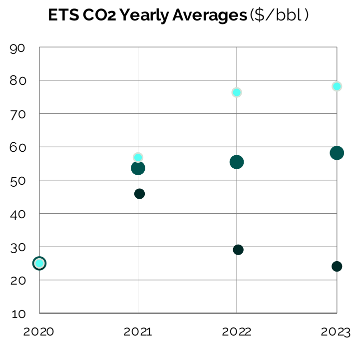

Source: REF-E Elaborations

EDITOR-IN-CHIEF
Virginia Canazza

DIRECTOR OF ENERGY OBSERVATORY
Claudia Checchi

EDITOR
Simona Soci

TEAM
Silvia Checola, Giacomo Ciapponi, Paolo Ciliento, Federico Clementi, Antonio De Paola, Elena Ferri, Tommaso Franci, Ana Georgieva, Valeria Ghirardi, Paolo Marino, Marco Pellegrino, Giorgio Perico, Alejandro Sanchez Ben, Saraceno Pia, Ralph Sassun

PUBLISHER
REF-E srl
Via Gioberti 5 - 20123 Milan (Italy)
www.ref-e.com - info@ref-e.com

EDITORIAL OFFICE, EDITING
Dalia Imperatori
Phone +39 02 43441022- Fax +39 02 43441027
E-mail: dalia.imperatori@ref-e.com

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REF-E SRL u.s.
Via Vincenzo Gioberti 5 – 20123 Milano
info@ref-e.com – www.ref-e.com