

UPM Plattling

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2020



UPM Plattling

UPM Plattling is located north of Plattling, a small town at the foot of the Bavarian Forest, where the Isar flows into the Danube. With a workforce of nearly 492 people and two paper machines, UPM Plattling produces up to 620,000 tonnes annually of uncoated (SC) and coated (LWC) supercalendered printing papers in reels and sheets for magazines, newspaper supplements, advertising brochures and sales and mail order catalogues.

The organisation of UPM Plattling includes the two production lines of Rhein Papier GmbH. The Plattling site was founded in the open countryside in 1982. It was originally comprised of the paper machine (PM) 10 to which the PM 11 was added in 1988. In 2007 the mill was expanded to include Rhein Papier GmbH's PM 1 paper machine. The PM 10 was closed in July 2019.

The raw materials used for papermaking include groundwood pulp, recovered paper, chemical pulp and natural pigments. Groundwood pulp is mainly made from forest thinnings and rolled timber from the surrounding areas. All wood fibres used in our production come from sustainable forestry. 99,7% of the water required for papermaking is taken from the Isar and only to a very small extent from a well on mill site. Process effluents are cleaned in two on-site treatment plants before they are discharged back into the Isar.

All of the steam and the majority of the power for the production processes are generated in the mill's co-owned combined heat and power plant running on natural gas. The remainder of the power is supplied via the public grid.



Production capacity	620,000 tonnes/year of graphic paper					
Personnel	492 (total heads as at 1 st January 2020)					
Products	Magazin papers (SC and LWC)) UPM Max UPM Ultra UPM Sol UPM Cat UPM Cote UPM Nova					
	UPM Smart UPM Star					
Side-products	Bark, broken logs and off-cuts					
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System Standard ISO 9001 – Quality Management System Standard ISO 50001 – Energy Management System ISO 45001 – Occupational Health and Safety Management System PEFC TM Chain-of-Custody – Programme for the Endorsement of Forest Certification FSC [®] Chain-of-Custody – Forest Stewardship Council					
	All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)					
Environmental labels	EU-Ecolabel (EU-Flower)					



UPM Plattling Environmental and Societal Responsibility 2020 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental and societal performance data and trends for the year 2020. The annually updated mill supplements and the UPM Corporate Environmental and Societal Responsibility Statement together form the joint EMAS Statement of UPM Corporation. The next Updated UPM Corporate Environmental Statement and also this supplement will be published in 2022.

UPM delivers renewable and responsible solutions and innovates for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. As the industry leader in responsibility we are committed to the UN Business Ambition for 1.5°C and the science-based targets to mitigate climate change. We employ 18,000 people worldwide and our annual sales are approximately EUR 8.6 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore - Beyond fossils. www.upm.com







For more information about PEFC certification visit www.pefc.org



Review of the year 2020

Environmental protection is an integral part of all papermaking processes. UPM Plattling has reported its environmental performance since as far back as 2000, when the site successfully gained certification to ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS). As a company of the Finnish UPM – The Biofore Company – we want to demonstrate to our customers, suppliers, employees and the general public that responsible environmental protection is given high priority in our production processes. The continuous improvement process focuses on continuously reducing the demand for energy and water, maximum waste avoidance and the use of environmentally friendly auxiliary materials. Every year, we set ourselves ambitious new environmental goals.

The year 2020 was shaped by the global pandemic and its effects on the protection of our employees and the continuation of our business activities at the Plattling location. The protective measures introduced quickly and consistently at the site were able to minimize the risk of infection with the Covid virus and create safe working conditions. The very low number of infected employees and the circumstances of the infection, which are almost exclusively found outside the company, are also evidence of our successful work in occupational health and safety. The restructuring measures due to the closure of PM 10 in mid-2019 were continued in 2020.

The environmental performance continued to develop in a stable manner compared to the previous year. There were no environmentally relevant deviations, but some specific values at the site, in particular the amount of wastewater at PM 11, are at a different high level compared to previous years. This is due to the changed situation after the closure of the paper machine 10 in 2019. Planned process engineering optimizations should also contribute to a continuous improvement of the environmental performance at the site in this area.

UPM Clean Run Campaign

The Group-wide Clean Run Campaign is aimed at ensuring environmentally sound production without environmentally relevant incidents. The mills are audited with regard to their environmental performance and assisted in their further development.

The discharge limits specified in the water permit were complied with. The same goes for the air emission limit values set in the BImSch permits of the power generation plants. The requirements of the 42^{nd} BImSchV for the proper operation of evaporative cooling towers will continue to be implemented. The cooling circuits are continuously monitored and effectively conditioned. In isolated cases the measured value of legionella was exceeded in the evaporative cooling systems of the PM 11 vacuum systems. With cleaning, disinfection and modification of the biocide conditioning, as well as technical optimization of inadequately working separator systems, the system has improved significantly over the course of the year.

Legal requirements and compliance

UPM Plattling is informed of relevant changes or amendments to legislation by an external service provider. This is done through a monthly newsletter, which is supplemented by circulars from various industry associations. The legal cadastre with all legal provisions applicable to the site is maintained on an Internet platform. There were no major effects regarding the site in 2020 due to changes in legislation.

Stakeholder feedback

In February there were indications of odor from the eastern area of the factory area. The primary clarifier of the wastewater treatment plant of the SC line was identified as a potential source. The authorities were involved in identifying measures.

In December, a resident from the northern neighborhood reported an increased noise level on the factory premises. No relevant sources of noise could be found. As in previous similar incidents, the mill responsibles have been in close contact with the complainant to clarify the matter.

Environmental performance

The water cycle of the PM 1 showed a tendency to develop odors, especially during shutdown processes, caused by anoxic/anaerobic microbiological processes. Similar processes within the primary clarifier were also considered. The mill development has successfully completed a project to avoid odor in the PM 1 environment and in the wastewater treatment plant. Measures were reduction of the reductive wood pulp bleaching to reduce the sulfur load in the circuit, ventilation of white- and clearwater tanks and dosing of an oxygen donor into the sewage system.



Sebastian Loewenberg, General Manager

Wolfgang Haase, Manager Environment

At PM 1, the use of chemical pulp could be reduced by 1.3 percentage points by implementation of APC (Advanced Process Control). The market pulp could be replaced with self-produced wood pulp and processed recovered paper from the company's own deinking plant.

The proportion of certified fibers from responsible forestry was in 2020 with a further increase of 3 percentage points above the level of 2019.

In 2020, the following projects were implemented at the Plattling location to increase energy efficiency.

On the LWC line, the dry solid content of the coating color formulations could be increased again in a second step, significantly reducing the drying energy on the coating machine. This measure led to an annual energy saving of almost 3,000 MWh and a reduction in CO₂ emissions of approx. 580 t/a.

Several energy saving measures were implemented at PM 1. Optimization of the mechanical pulp post-refiners of the paper machine, which led to a lower idle power. Switch of the calenders to operation without steam boxes for almost all paper grades. Reduction of the drive power of calender rolls by using low-friction doctor blades. The air ventilation system was installed in the PM 1 water towers to avoid odors in the filled towers during standstills. The energy saving from these measures is approx. 35,000 MWh/a, which corresponds to a reduction in CO₂ emissions of approx. 9,000 t/a.

UPM Plattling

Responsibility figures 2020



Water

Spezific load in treated effluent (kg per tonne of paper)

COD reduced by

19%

in the period 2013-2020



In 2020, the proportion of certified fibres used for papermaking was



Share of recycled fibers increased by

10%

in the period 2013-2020



Energy

District heating from excess heat

22,303 MWh

supplied to nearby dairy and asparagus growers to enable earlier harvesting

About



energy savings could be realized in 2020

Safety

Reduction of lost time accidents by

66.6%

compared to 2019

In 2020 the employees made

1,433

safety and enironmetal observations



Waste



All of the Plattling mill's production waste is

100%

recycled as material or incinerated with energy recovery



Recovered paper

In 2020



paper labels removed from bottles were recycled to produce high quality fibre raw material

Health

In autumn



apples, bananas and oranges were offered free of charge as a "vitamin injection" to the employees



face masks were donated to a hospital in the neighbourhood



Community

UPM's sponsorship supports around



active member of the sports club (former mill sports club)



Energy generation is the primary source of airborne emissions from the paper mills. Through improving the energy efficiency of our production lines and using nothing but natural gas as a fuel we were able to maintain emissions on

In April of 2010, a new gas and steam turbine power plant servicing the whole site went on line, replacing eight gas fired steam boilers which are partly used as a backup source in the event of a power plant failure.

an acceptable level over the years.

Thanks to the efficiency of combined power and steam generation, the new

power plant is much more efficient (by up to 85% in terms of primary energy use) than steam-only boilers. The operative start of the cutsize line having substantially changed the range of paper grades made on PM 10, in this way considerably influencing the mills environmentally relevant parameters, 2013 was set as the reference year for reporting energy-related emissions.

Since the closure of PM 10 has no significant impact on the specific energy consumption and emission values, no new reference year will be set. The emissions measured at the power plant and the steam boilers were within the usual range for the concentrations of CO and NO_x .

Due to the longer shutdown of the power plant, the steam boilers were used more frequently in 2020.

In 2020, the specific emission loads of the power generation plants were at the long-term average level. CO_2 and SO_2 are calculated from the gas consumption. NO_x and CO are measured values. When the system is operated, particular attention is paid to compliance with the NO_x concentration limit values, while the CO values are basically at a very good level.

EMISSIONS FROM THE POWER PLANT									
	Limit value (mg/Nm³)	Mean values measured (mg/Nm³)							
		2013	2014	2015	2016	2017	2018	2019	2020
СО	100	7.2	3.6	2.9	3.1	7.1	6.6	6.5	2.6
NO _x	50 (variable depending on supplementary firing)	24.8	23.2	27.8	31.3	44.4	40.4	28.7	25.0

EMISSIONS FROM THE STEAM BOILER									
	Limit value (mg/Nm³)	Mean values measured (mg/Nm ³)							
		2013	2014	2015	2016	2017	2018	2019	2020
CO	50	2.5	2.7	4.3	4.3	4.8	3.4	2.7	1.6
NO _x	100	77.6	71.6	71.6	72.4	75.5	84.7	78.6	78.2





Sulphur dioxide, SO₂



Carbon monoxide, CO







All graphs show the specific emissions per MWh of produced energy on site in comparison with 2013

Vaste



In keeping with the concept of circular economy, the majority of production waste is recycled locally. Hazardous wastes are forwarded exclusively to specialised waste management companies to be disposed of in accordance with legal requirements. The specific volume of total waste including by-products was in 2020 with 5% increase higher than the level of the previous year. While there was a slight decrease in the specific fiber residues and bio sludge volumes, the by-product volumes of bark and capped wood were above the previous year's level. The reason for this is the slight increase in the proportion of mechanical pulp with a simultaneous reduction in the proportion of chemical pulp in the paper. The rejects from the deinking plant could be reduced by more than 10% due to the changed of input raw materials. There was an increase of 14% in hazardous waste. In 2020, there was a big volume of waste oils from the emptied systems of the decommissioned PM10. The recycling rate for all residual materials was 99.95% in 2020, at the very high level has been maintained for years. No process waste was sent to landfill.





UPM Plattling drew more than 99% of the water required for the production process from the Isar, with the remaining 1% to cover temporary demand peaks coming from a well on the mill premises. In a modern process water treatmentplant, particulate contaminants are removed from the river water and water hardness is reduced. The process water is first used for cooling and then for the paper production process.

The specific waste water volume was at the high level of the previous year. This is mainly due to the LWC line. The SC line with PM 1 has been operating at a very good level for many years. The main reason is the closure of PM 10, which had operated in a joint water circuit with PM 11.

The water and material cycles of PM 11 will be connected to PM 1 via a transfer pipeline at the beginning of 2021, which will lead to a reduction in the specific amount of wastewater. The mill's waste water treatment plant for the LWC and SC production lines operated mostly trouble free throughout the whole year.

In September the LWC line had a shortterm low performance run, which led to increased discharge values for BOD₅ and COD, but not to limit values being exceeded. The high outside temperatures in July and August resulted in outlet temperatures close to the limit value. Due to the elimination of the heat load from the PM 10, the cooling systems have a sufficiently large capacity. During the Christmas shutdown, the lack of organic load in the wastewater resulted in a redissolution of nitrogen and phosphorus.

The corresponding discharge values were very close to the limit values. A new water law permit was issued on September 1st. The reason for this was, on the one hand, the adjustment of the limit values in accordance with the new Annex 28 of the Waste Water Ordinance and, on the other hand, the adjustment of the production capacity and waste water volume due to the closure of PM 10. The parameters TOC (total organic carbon) and TNb (total nitrogen bound), as well as the specific discharge loads for COD and TOC. The new parameters have been monitored online for years in anticipation of the implementation of Annex 28. So there is sufficient experience with the measurement of these parameters. The values for TOC and TNb have also kept the permit limits.

The average effluent concentrations showed similarly good values as in the previous year or could even be reduced. The specific amount of wastewater is still at a relatively high level due to the unfinished water connection between the two production lines.

Emissions from the joint effluent treatment plant



Phosphorus, P mg/l 1.2 0.8 0.4

13

15 16 17 18



Adsorbable organic halogen compounds, AOX



Developmet of waste water volume per tonne of paper in comparison with 2013







Societal responsibility

Safety first!

The Plattling site has been working for many years to improve occupational safety. The safety campaign launched by UPM in 2012, involving the implementation of safety standards, resulted in measures being taken that go beyond statutory requirements. They include safety walks by managers, targeted safety discussions and the documentation of safety observations by all staff. The aim is to raise the employees' awareness of unsafe conditions and activities. An extensive exchange of experience with other UPM mills on accidents and high-risk incidents as well as cross-site occupational safety audits make the knowledge and findings of others available to us to eliminate potential risks from the outset.

Looking back, the accident figures at the site have fortunately decreased in comparison with the previous year. The number of lost time accidents decreased from 9 to 3. These were only minor accidents. We have come closer to our goal of "O accidents".

We are still working intensively to completely prevent all serious accidents and highlight occupational safety as a management task.

Preventive healthcare

We spend a large part of our lives at work, where the workplace conditions can impact our health either positively or negatively. Healthy, resilient and motivated employees are prerequisite for the success and competitiveness of our mills. This is why we want to create working conditions that are conductive to our employees' health, raise their health consciousness and at the same time strengthen and maintain their satisfaction and motivation.

Therefore we implemented a corporate health management programme with a large number of offerings:

- Campaigns to promote healthy diet and light meals were carried out in the company's own canteen
- Training for in-house paramedics and first aid courses

Events such as the Safety Day in previous years with an extensive information and participation program unfortunately had to be canceled due to the corona pandemic.

Prevention and health promotion are increasingly moving into focus. UPM Plattling offers its employees various preventive examinations, such as bowel cancer screening, which was well received.

Engaging with society

Well-functioning stakeholder dialogue is a key component for success for UPM. We are committed to developing the vitality of the communities close to our operations through active co-operation and open dialogue with various stakeholders as well as, for example, through sponsorships and employee volunteering.

We impact local communities and societies in many ways. Understanding the impact that we have is an essential component of our business success. In many locations, we are a significant employer, taxpayer and partner to local entrepreneurs, making positive contributions to the local economy. We apply several precautionary measures to mitigate and remedy potential negative environmental and social impacts on our surrounding communities.

UPM Plattling gives financial support to the former mill sports team, which is now operating as an independent sports club under the name of MDSC. For employees' children up to 10 years old, there is a visit by Father Christmas with presents and a cultural programme organised by the MDSC.

We build a sustainable, innovation-driven future by sharing our expertise and assets for causes we care about. The focus areas of the UPM Share and Care Programme are: Reading & learning, responsible water use and boosting bio-innovations.

The Biofore Share and Care programme comprises three forms of support: sponsorships, donations and employee volunteering. The support can be a monetary contribution, products, materials or employee volunteering. Local sponsorship is target-oriented and long-term involvement in the community where UPM operates.



UPM is providing the Mainkofen District Hospital and the RADIOLOGIST Deggendorf with 10,000 protective face masks as part of its Biofore Share & Care program.



In bright sunshine, the UPM mask donation could be handed over in a large circle in front of the clinic building.

Cooperation with schools and vocational training

The Plattling site currently offers vocational training as:

- Paper technologist
- Machine and equipment operator
- Warehousing logistics expert
- Electronics technicians for industrial systems
- Electronics technicians for automation technology
- Industrial mechanic



Secondary schools, colleges and universities regularly visit the mill. School leavers and graduates are addressed at technical symposiums or events held by the paper industry association. In Plattling, like at many other sites, UPM offers young people the opportunity to enter the world of papermaking through summer jobs, internships, traineeships and bachelor and master theses. Our aim is to build and develop networks to create a sustainable link between schools and industry.

Organisational structure and emergency organisation

Operators in charge are appointed for environmentally relevant production plants and ancillary facilities. As required by law, appointed officers advise the mill management and the specialist departments in the following areas: immission control and water protection, fire protection, waste, radiation and laser protection, internal rail operations and hazardous goods. In addition, there are designated representatives responsible for the integrated management system (quality, environment, energy and occupational safety). Emergency plans have been defined for emergencies of all kinds, such as fire, environmental incidents and industrial accidents. From alerting to immediate action and follow-up, there are guidelines to minimize the effects of an emergency as far as possible and prevent similar events in the future. For emergencies of a larger scale, there is an emergency staff who decides on any further action to be taken and provides follow-up.



Environmental parameters

The figures related to production as well as raw material and energy consumption are published as aggregated figures on group level in the UPM Corporate Environmental and Societal Responsibility Statement.

		Rhein Papier GmbH		
		2018	2019	2020
Production capacity	Paper	Up to 785,000 t (3 paper machines)	Up to 714,000 t (3 resp. 2 paper machines)	Up to 620,000 t (2 paper machines)
Raw materials and additives	Recovered paper Roundwood Chemical pulp See UPM Corporate Environmental and Societa Pigments Responsibility Statement for more information Process chemicals Consumables		d Societal nation	
Energy	Fossil fuels Purchased power	100% See UPM Corporc Responsibility Stat	100% ate Environmental an ement for more inforr	100% d Societal mation
Emissions to air	Carbon dioxide, CO ₂ (fossil) Nitrogen oxide, NO _x Carbon monoxide, CO Sulpur dioxide, SO ₂ Particulates	332,003 t 136.7 t 30.4 t 3.3 t 0.20 t	410,970 t 127.1 t 34.8 t 4.1 t 0.25 t	283,282 t 87.8 t 15.0 t 2.8 t 0.17 t
Water intake	Process water Cooling water	10,073,965 m³ 0 m³	9,143,873 m³ 0 m³	8,262,967 m ³ 0 m ³
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P (total) Nitrogen, N (inorganic) Adsorbable organic halogen compounds, AOX	9,244,969 m ³ 1,737 t 61.1 t 3.3 t 28.3 t 0.85 t	8,297,831 m ³ 1,537 t 66.9 t 2.8 t 23.4 t 0.53 t	7,344,730 m ³ 1,288 t 65.9 t 2.3 t 25.6 t 0.56 t
Side-products and waste ¹⁾	Total waste volume of which Side-products – Bark and wood residues Waste for recovery – Deinking sludge – Fibre residues – Biosludge – Wood and bark waste – Paper recovery rejects – Scrap metal – Construction waste – Other waste Waste for disposal Hazardous waste Recovery rate (total)	210,229 t 132,617 t 26,659 t 17,536 t 28,212 t 142 t 1,460 t 482 t 124 t 2,897 t 0 t 100 t 99.98%	170,655 t 101,405 t 23,917 t 17,729 t 24,470 t 190 t 763 t 406 t 31 t 1,601 t 0 t 143 t 99.95%	159,520 t 98,996 t 19,267 t 14,921 t 23,611 t 139 t 608 t 390 t 4 t 1,432 t 0 t 153 t 99.95%
Size of mill area	Sealed area Nature-oriented area on site Total area	32.3 ha 20.0 ha 52.3 ha	32.3 ha 20.0 ha 52.3 ha	32.3 ha 20.0 ha 52.3 ha

1) incl.moisture



Performance against targets in 2020

Unless otherwise stated, the reference year was 2019

TARGETS	TARGET ACHIEVED?	COMMENTS
 Water After closure of PM10, the specific fresh water demand of the LWC line will be adjusted to the level of 2018 by the end of 2021 	No	The necessary investments have not yet been fully implemented
2 Water and air Comply with "CleanRun" provisions (0 category 3–5 deviations)	Yes	Power generation and waste water treatment plant performed without any permit limit breach
3 Raw materials and chemicals – Reduction of chemical pulp at PM1 for 1% (points)	Yes	 The use of chemical pulp could be reduced by 1.3 percentage points
 Reduction of flocculation aid at bio sludge press for 5% Trials for substitution of caustic soda with ash side products 	Yes No	 The use of flocculants could be reduced by approx. 40% The project will continue in 2021
4 Waste Increasing of dry solid content of bio sludge at least on 1% (points)	Yes	The dry solid content could be increased by 1.1 percentage points
5 Energy Reduce energy consumption by 4,000 MWh/a	Yes	The target achievement was even exceeded with a reduction of 37,895 MWh/a

Targets for 2021

Unless otherwise stated, the reference year is 2020

TARGETS	DEADLINE	DEPARTMENT RESPONSIBLE
1 Water After closure of PM10, the specific fresh water demand of the LWC line will be adjusted to the level of 2018 by the end of 2021	12/2021	Production
2 Water and air Comply with "CleanRun" provisions (0 category 3–5 deviations)	12/2021	Production, Environmental management
3 Raw materials and chemicals Trials for substitution of caustic soda with ash side products	12/2021	Production
 4 Waste Increasing of dry solid content of primary and bio sludge at least on 1% (points) Reduction of the specific CO₂ emissions on the transport of waste disposal by 4% Reduce material losses by 10% 	12/2021 12/2021 12/2021	– WWTP, Mill Development – Environmental management – Production
5 Energy Reduce energy consumption by 15,000 MWh/a	12/2021	Groundwood Pulping, Production,



Environmental verifier's declaration on verification and revalidation activities

The undersigned, EMAS environmental verifier, Astrid Günther (DE-V-0357), acting for TÜV NORD CERT Umweltgutachter GmbH, licensed for the scope NACE Code 17.12 (papermaking), declares to have verified whether the site UPM Plattling, Rhein Papier GmbH, in 94447 Plattling, Nicolausstr. 7, Germany, as indicated in the updated Environmental Statement 2020 of the mentioned site (registration number FI-000058), meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009, as amended by Commission Regulation (EU) 2017/1505, on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS).

By signing this declaration, I declare that:

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
 the outcome of the verification and validation confirms that there is
- no evidence of non-compliance with applicable legal requirements relating to the environment

- the data and information of the updated Environmental Statement 2020 of UPM Plattling, Rhein Papier GmbH, reflect a reliable, credible and correct image of all the activities of UPM Plattling, Rhein Papier GmbH, within the scope mentioned in the updated Environmental Statement 2020. This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Plattling, 06 May 2021

Astrid Günther

Astrid Günther Environmental verifier DE-V-0357 TÜV NORD CERT Umweltgutachter GmbH

We reduce the world's reliance on fossil-based materials by developing renewable and responsible products and solutions in all our businesses. **UPM Biofore – Beyond fossils.**

UPM Plattling

Rhein Papier GmbH Nicolausstraße 7 94447 Plattling Germany

Tel. +49 9931 502-0 Fax +49 9931 502-509

For further information, please contact: Sebastian Loewenberg General Manager Tel. +49 9931 502-0

Wolfgang Haase Manager Environment Tel. +49 9931 502-505



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