

## **OUR RAIL SYSTEM PROJECTS CONTINUE AT FULL SPEED IN 2023**

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### **DOMESTIC VEHICLE AND WAGON PRODUCTION**

#### **Vehicle Production**

BOZANKAYA continues its Gebze-Darica metro vehicles, Romania and Kayseri Tram vehicle production projects in 2023. The company will manufacture the remaining six of 16 trams for Iasi and the remaining 24 of 40 trams for *Timisoara* and dispatch them to Romania. Bozankaya will deliver 11 trams for Kayseri and 28 driverless metro vehicles for the Gebze-Darica metro line in this year. DURMAZLAR will manufacture and deliver 13 bi-directional trams for Resita/Romania. DURMAZLAR also continues to produce high-speed train bogies for Alstom and dispatch them in lots.

TÜRASAS is successfully fulfilling the task of being an umbrella organization for all companies in the railway sector by designing the railway vehicles and critical subsystems that are needed in our country and our region with local and national resources and producing together with the domestic suppliers. Within the scope of the production of the national electric train set, the assembly and factory tests of the prototype suitable for 160 km/h were completed in 2022. TSI certification for the National Electric Train Set developed will be completed in 2023 and three sets of trains will be delivered to TCDD. 19 sets of national trains will be produced between 2023 and 2025. The prototype of the National Electric High-Speed Train Set with a speed of 225 km/h is planned to be completed in 2023 and a total of 8 sets of mass production is planned to be made by 2025. GAZIRAY National Suburban Set project is aimed to be manufactured for the first prototype and 8 sets in 2023, and to be put into service in 2024-2025.

This year, test and certification works in the E5000 type Electric Outline Locomotive will be completed and commercialized, which will be the first locomotive in Türkiye with TSI certificate, 100% funded by TÜBİTAK KAMAG. Within the scope of this project, 1.3 MW AC Traction Motor was developed. The modernization of another TÜBİTAK KAMAG project, TLM16V185 Heavy-Duty Diesel Engine with 1200 hp power with 8 cylinders, will be completed in this year.

Another ongoing project is the Development of National Locomotive Platform with CoCo Axle Assembly. At the end of the project, three types of locomotives will be installed on the common platform and the first step will be taken to create a product family.

11 maintenance vehicles manufactured in Eskisehir will serve on Swiss railways. Prototype manufacturing of the vehicles continues. Two prototypes of the maintenance vehicles, where testing and homologation works are carried out together with Swiss railways, are planned to be delivered in 2023.

In addition, a Natural Gas Transformation Project has been launched to enable the diesel engine with 2400 HP power to operate with natural gas. The prototype is scheduled to be completed in 2024.

#### **Wagon Production**

All of our wagon manufacturers are working on exporting completely by increasing their annual capacity. There is an annual market of approximately USD 12 billion in the new freight wagon market worldwide and an annual market of approximately USD 9 billion in maintenance, repair and renovation works. Approximately half of the 800,000 freight wagons currently available in Europe need renovation. Our wagon manufacturers can utilize their high production capability in these markets and

Türkiye can become an export base for wagon production in a short time. Considering that our country needs at least 30,000 wagons by 2035, we can say that wagon investments will increase further in the coming years and Türkiye will become a wagon production center.

TÜRASAŞ aims to produce 450 national freight wagons this year. The Special Purpose Military- Wagon Project has been launched and prototype production is planned to be completed this year. Truck and Trailer Transportation Wagon Project, which is a critical project for the intermodal transportation works of our country, will be completed in 2024.

Container wagons produced by VAKO Vagon are used on the railways of various countries including Germany, France, Switzerland, Spain and the Netherlands. VAKO plans to produce 1000 wagons for 8 different clients in 2023 with its 5 factories in Temelli and Beypazarı in Ankara.

ERCIYAS Holding, which entered the railway industry in 2016 with RC INDUSTRY, has become a significant exporter of Türkiye in all kinds of freight wagons, passenger wagons, bogie production and service services in accordance with UIC and TSI standards. ERCIYAS WAGON GROUP, which consists of ERCIYAS WAGON and RC INDUSTRY, aims to be among the leading European producers in this field by making new investments in Eskişehir and Kayseri.

Founded in 1980, GÖK GROUP launched GÖK RAIL brand in 2008. In 2020, the company ranked among the top 1000 in Türkiye's export rankings. Aiming at manufacturing approximately 1000 freight wagon with the new investments in recent years in Sivas Demirağ OIZ and the 1stOIZ, GÖKRAIL increases its exports each year by producing various types of wagons for several countries including France, England, Germany, Austria, India, Poland and Russia.

Established in 1992 in Eskişehir, ESRAY manufactures special and standard types of freight wagons, freight wagon chassis, bogies and superstructure equipment for the railway sector in 24 decares, of which 14 decares are closed. ESRAY exports about 70% of its production to Germany, USA, Switzerland, Poland, Slovakia, Bulgaria, Spain, Italy, Netherlands, France, Egypt, South Africa and Azerbaijan.

Founded in 2006 in Kayseri to produce freight wagons and spare parts, RAILTUR today manufactures Y25 type freight wagon bogies, tram and metro wagon bogies, EMU bogies and various types of freight wagons and their spare parts in a 55 decares of closed area, 12 decares of which are indoors. Manufacturing approximately 2500 Y25 type bogies per year, RAILTUR exports almost all of its production and is constantly growing in the EU market with its knowledge, experience, machine park and quality superiority.

Epsilon NDT manufactures in two locations in Eskişehir Organized Industrial Zone. Starting with Solentek in 2010, the company exports 95% of its production to Europe including the chassis and superstructures of various types of container wagons and steel coil transport wagons, as well as the design and production of specific freight wagon chassis, automobile transport wagon, ballast transport wagon, switch transport wagon.

ACARLAR Vagon was established in Afyon in 2011. In addition to the maintenance, registration and revision works of wagons, locomotives and railway machines, the company carries out locomotive bogie disassembly-assembly and sub-maintenance operations, and it conducts wheel body replacement of freight and passenger wagons, locomotives and railway machines along with lathe and junction box maintenance operations in the wheel maintenance facility with an annual capacity of 15,000 unit.

RAYVAG Vagon was established in Adana OIZ in 2007. The company provides wagon manufacturing, maintenance, repair and revision services. In 2018, it was acquired by Greenbrier-AstraRail, one of the largest wagon manufacturers in Europe.

All of our companies in Sakarya work export oriented. ÖZBİR Vagon, YAVUZLAR Vagon, SAVASAŞ Vagon, AKÇELİK, YÜCESAN, DEMİRELLER, INOTRA and ALNAL, which conduct the production of passenger wagons, maintenance, repair and modernization works of all kinds of conventional passenger wagons, production of all kinds of parts and equipment of modern train sets, manufacturing of mechanical and electrical parts production with zero wagon assembly.

## **HIGH SPEED TRAIN PROJECTS**

### **Ankara-Sivas High Speed Train Project**

Line works have been completed except for the line between Elmadağ-Kırıkkale in the project launched in 2009. 99.67 percent physical progress has been achieved in the infrastructure construction works of the 405-kilometer high-speed Ankara-Sivas railway line consisting of 8 stations. When the project is completed in April 2023, the travel time between Ankara and Sivas will be reduced from 12 hours to 2 hours, and between Ankara and Yozgat to 1 hour.

### **Ankara-Izmir High-Speed Train Project**

Ankara-Izmir High-Speed Train Line Project is a significant project that will connect Ankara to Izmir within the Republic of Türkiye Ministry of Transport and Infrastructure, General Directorate of Infrastructure Investments. The 508-kilometer high-speed train line passes through Ankara, Afyonkarahisar, Uşak, Manisa and Izmir.

54 percent physical progress was achieved in infrastructure works on the Ankara-Izmir High-Speed Train line, of which tender was firstly made in 2016, and renewed after the contractor company terminated the tender. When the line is completed, the travel time on the 508-kilometer line will be reduced to 3 hours and 30 minutes. The line is aimed to transport 13.5 million passengers and 90 million tons of freight annually.

The Ankara-Izmir High-Speed Train project, which was undertaken by RG UK & ERG Türkiye & SSB AG Joint Venture, is planned to be completed in 42 months. The UK has provided 2.1 billion Euros in funding for the Ankara Izmir high-speed train project.

### **Karaman-Ulukışla High Speed Train Project**

Konya-Karaman High Speed Train line has been put into service. Infrastructure works have been completed and 55 percent physical progress has been achieved in superstructure construction works between Karaman and Ulukışla.

### **Eskişehir-Antalya High-Speed Train Project**

The EIA report, which was launched in 2017, was published in the Eskişehir-Antalya high-speed railway project carried out by the Ministry of Transport and Infrastructure. According to the survey studies, the railway line has a total length of 524 km on the Eskişehir-Afyonkarahisar-Burdur-Antalya route. Following the completion of the EIA process and implementation projects, the construction of the project will be initiated.

When Eskişehir-Antalya railway project, which is designed as a double line, is completed, it will be possible to travel uninterruptedly by high-speed train between Istanbul and Antalya. A total of 11 stations, 104 overpasses, 349 underpasses, 485 culverts, 69 tunnels, 36 bridges and 18 viaducts are

planned to be built. With the completion of the Ankara Izmir High Speed train project, it is planned to organize high-speed train operations from Ankara to Antalya through Afyon.

In addition, with the completion of high-speed train connections between Marmara, Central Western Anatolia and Western Mediterranean, a great contribution will be made to the economy in passenger and freight transportation.

### **Halkalı-Kapıkule High-Speed Train Project**

The Halkalı-Kapıkule Railway Project, which will provide Türkiye's high-standard railway connection with European countries, was initiated in 2019. The 153-kilometer Çerkezköy-Kapıkule line, the first stage of the Halkalı-Kapıkule Railway Project to connect Edirne to Istanbul by high-speed train will be completed in 2024. 58 percent of physical progress and 80 percent of infrastructure works have been achieved. Both freight and passenger trains will operate in the project, which is built as a double line, with a signal suitable for 200 kilometers/h speed and electrification.

With the Halkalı-Kapıkule High Speed Train Line Project, Edirne, Kırklareli and Tekirdağ will be connected to the high speed train network and the travel time for freight trains between Halkalı and Kapıkule will be reduced from 8 hours to 3.5 hours and for passenger trains from 3.5 hours to 1.5 hours.

### **Bursa-Yenişehir-Osmaneli High Speed Train Project**

In connection with the Ankara-Istanbul high-speed train line, 86 percent progress has been achieved in the infrastructure works of the 106-kilometer-long Bursa-Yenişehir-Osmaneli high-speed train line.

The 201-kilometer Bandırma-Osmaneli railway project, which initiated in 2012, is expected to be completed in 2025. As this line is completed, it will be integrated with Ankara- Istanbul high speed railway and connect Bursa with Ankara and Istanbul.

### **Mersin-Gaziantep High-Speed Train Project**

In the project, which initiated in 2020, it is planned to connect Mersin, Adana, Osmaniye and Gaziantep provinces with high-speed trains. When the 231-kilometer-long line is completed, it will be the longest railway tunnel with 2 tunnels with a total length of 19.903 meters. With the gradual completion and commissioning of the project by the end of 2024, the travel duration through Mersin-Adana-Gaziantep will be reduced to 2 hours and 15 minutes.

### **Ankara-Yerköy-Kayseri High-Speed Train Project**

With the 142-kilometer-long line, of which tender has been made, travel duration of Ankara-Kayseri route will be reduced to 2 hours. The project, which will be built as a double line, will be completed in 2026. When the project is completed, it will be integrated into Ankara-Sivas High-Speed Train line.

## **2023 URBAN RAIL SYSTEM PROJECTS**

Until today, the 312.2 kilometers of the 811.4-kilometer-long urban rail system line, built in 12 provinces across our country, has been completed by the Ministry of Transport and Infrastructure. Among 13 urban rail system lines being constructed by the Ministry with a total length of 161 km, the Istanbul Airport Metro line and Gaziray Suburban Train line have been opened.

- **ISTANBUL RAIL SYSTEM PROJECTS**
- **T5 Eminönü-Alibeyköy Tram Project**

The construction works continue and 95% progress has been made at the 1.3-kilometer-long Cibali-Eminönü section of the project, which was initiated in 2016 and was commissioned at the beginning of 2021 by Istanbul Metropolitan Municipality. The line will be integrated with T1 Bağcılar-Kabataş tram line and sea piers at Eminönü station, M2 Yenikapı-Hacıosman metro line at Küçükpazar station, TF2 Eyüp-Piyer Loti cable car line at Eyüp Cable Car station and M7 Kabataş-Mahmutbey-Esenyurt metro line at Alibeyköy station.

### **T6 Sirkeci-Kazlıçeşme Rail System Line**

Within the scope of the 8.3-kilometer Sirkeci-Kazlıçeşme Urban Transportation and Recreation Project with 8 stations, the line, which was initiated by the Ministry of Transport and Infrastructure in 2021, achieved 45% physical progress and planned to be completed in 2023, will be a new generation transportation project with a hybrid character with new opportunities such as sociocultural, tourism, economic, ecological, recreation, sports, navigation, cycling, scooter, besides the transportation.

### **M1b Yenikapı- Kirazlı Line Extension**

24% progress has been achieved in the project initiated by Istanbul Metropolitan Municipality in 2017. In the project planned to extend the M1b Yenikapı-Kirazlı line from Küçükçekmece to Halkalı with 10 stations, it is foreseen that Kirazlı-Fatih section will be put into service in 2023 and Fatih-Halkalı section in 2025.

### **M3 Kirazlı-Bakırköy IDO Metro Line Extension**

It is planned that the Başakşehir/Metrokent-Kayaşehir Merkez part of the Metro line, which was started to be constructed by the Ministry of Transport and Infrastructure in 2015, will be put into service in February 2023 and the Kirazlı-Bakırköy IDO part in the first half of 2023. 90% progress has been achieved in the 8.4-kilometer-long Kirazlı-Bakırköy IDO Line with 8 stations.

### **M3 Başakşehir-Kayaşehir Metro Line Extension**

The project, which was launched by the Ministry of Transport and Infrastructure in 2017, will be put into service in the first quarter of 2023. 99% progress has been achieved in Başakşehir/Metrokent-Kayaşehir Merkez Line, which has 6.2 km line length and 5 stations.

### **M4 Tavşantepe-Tuzla Metro Line Extension**

The project was initiated by IMM in 2017. Kaynarca Central Station is expected to be put into service in 2023 and the rest in 2025. The line is planned to be extended to Tuzla by 2029.

### **M5 Çekmeköy- Sultanbeyli Metro Line**

For the new line construction initiated by IMM in 2017, the first stage is planned to be put into service in July 2023 and the second stage in 2024.

### **M7 Mahmutbey-Esenyurt Square Metro Line**

The Mahmutbey-Bahçeşehir-Esenyurt Metro Line, which was given out by contract by IMM in 2017, has 10 stations and a length of 18.5 km. This project, which is the continuation of the existing M7 Kabataş-Mecidiyeköy-Mahmutbey metro line, starts from Mahmutbey station and ends at Esenyurt Square station. The 7 kilometers of 1st stage is planned to be completed in 2024.

### **M8 Bostancı-Dudullu Metro Line**

The driverless line, which was initiated by IMM in 2016 and has a length of 14.27 km with 13 stations, was put into service on January 6, 2023.

#### **M9 Ataköy-Ikitelli Metro Line**

The 11.3 km long line, which was initiated by IMM in 2016, is planned to be completed in 2023.

#### **M11 Istanbul Airport-Kağıthane Metro Line**

100% progress was achieved in the project initiated by MTI in 2018 and the 32 km-long line was opened on January 22, 2023.

#### **M12 Göztepe-Ümraniye Metro Line**

The line, which consists of 13 kilometers of route with 11 stations and initiated by IMM in 2017, is planned to be opened as a shuttle operation between the Financial Center Station and Yenisahra Station in February 2024.

#### **M14 Altunizade-Kazım Karabekir Metro Line**

The 7.3-kilometer line, which was initiated by the MTI in 2021, is planned to be opened in 2024.

- **ANKARA RAIL SYSTEM PROJECTS**

The operation tests of the AKM-Gar metro line are being conducted by the Ministry of Transport and Infrastructure and will be opened during the first quarter of 2023. The Ministry's investment program also includes the Keçiören-Airport metro project. A tender will be held for the Dikimevi-Natoyolu LRT line, the project of which has been prepared by the Ankara Metropolitan Municipality. Kızılay-Dikmen, Keçiören-Forum, M2 line Koru-Yaşamkent and Koru-Bağlıca extension projects are being prepared. In addition, studies of the connection of Etlik City Hospital are also carried out.

- **IZMIR RAIL SYSTEM PROJECTS**

The implementation project stage has been started for the Karabağlar-Gaziemir metro line, which will be the longest metro line in the city, with a length of 32 km with 24 stations. Izmir Metropolitan Municipality will open Narlıdere metro with 7.2 km length and 7 stations in 2023 to expand its rail system network and Çiğli tram lines with 11 km line length and 14 stations that will relieve Çiğli traffic. Thus, the rail system line length, which was 180 km in 2022, will reach 198 km by 2023. The rail system network in Izmir is planned to be 465 km in total by 2030. In addition, the construction has started for the Buca Metro, which is 13.5 km long and includes 11 stations. Besides, the tender works of the Örnekköy-Yeni Girne tram line project, which will have a length of 5 km and 9 stations, and 26 tram vehicles planned to be purchased in 2023 are also continue.

Izmir Suburban System having 52 km suburban line, which will connect IZBAN to Bergama in the north, is also under construction.

- **BURSA RAIL SYSTEM PROJECTS**

The projected Emek-YHT-City Hospital Metro Line will have a total length of 6.1 km and 4 stations. Within the scope of the Transportation Master Plan works, projects are being prepared for the 3.5 km extension line that will connect BursaRay, which ends with the University Station, to Görükle. In addition, it is planned to build a warehouse for 80 vehicles and to purchase 17 series of monolithic rail system vehicles.

- **KAYSERİ RAIL SYSTEM PROJECTS**

There are 2 tram projects ongoing in Kayseri. The Ministry of Transport and Infrastructure will open the 6.5 kilometers of Tram Line Project on the route of Belsin Anafartalar-Terminal-City Hospital-Nuh Naci Yazgan Üniversitesi-Mobilyakent during the first quarter of 2023. The Cumhuriyet Square-Talas Anayurt Line has a length of 5.5 km and will be put into service in mid-2023. 11 trams that will serve on these lines will be produced by Bozankaya and delivered to Kayseri Ulaşım in this year.

- **GAZIANTEP RAIL SYSTEM PROJECTS**

Last year, Gaziantep Metropolitan Municipality completed the GAZIRAY line, initiated in 2017 and consists of 25.5 km of line with 16 stations, connecting the city center and two industrial zones. TÜRASAŞ, which won the tender of for 8 electric train sets (32 wagons) for GAZIRAY suburban operation, plans to deliver the first prototype set in 2023 and all vehicles between 2024-2025.

The implementation project of the Station-Düztepe-Hospital Light Rail System (LRT) driverless metro (GoA4) line, which will solve major traffic problems of Gaziantep and whose contract was signed in 2017, has been completed. The 10.9 km long line, which will serve the North-South axis of the city, with 9 stations and 1 heavy maintenance warehouse site, is planned to be put into service in 2024.

- **KONYA RAIL SYSTEM PROJECTS**

Konya Metropolitan Municipality has increased the length of the Rail System line from 21 km to 26.5 km with the Alaaddin-Courthouse Catenary Free Tram Line, which was opened in 2015.

The current Alaaddin-Campus tram line and the Alaaddin-Courthouse line, which is integrated into the city center, have been designed to pass through Mevlana Street, Aslanlı Kışla Street, Fetih Street Intersection and end in the Courthouse. This rail system line, which was put into operation in 2015, is 5.5 km long and has a total of 9 stations, two of which are common with the Campus line.

The KONYARAY Suburban Line, which is contracted by Konya Metropolitan Municipality and TCDD General Directorate, is planned to reach 17.4 km in the first stage between Konya Station and airport, and 26 km in the second stage.

The construction works will also start on a 16.9 km rail system line from Fırat Street to Beyhekim State Hospital, Barış Street, Güzeldere Street, Gaziveren Street and Hadimi Street in Özalkent region, as well as a 1.4 km extension line from the Courthouse to the City Hospital, which is the last stop in addition to the Alaaddin-Courthouse line.

Thus, Konya will have a total of 65 km of new rail system line in four years with Metro, Suburban, Barış Street Tram and Courthouse-City Hospital extension tram.

The light rail system line with a total length of 21.2 km. between Necmettin Erbakan University- New High-Speed Train Station- Fetih Street- Meram Municipality, which was contracted by Taşyapı and Chinese CMC Co. partnership in 2019 and whose construction has not yet started, consists of 22 stations.

- **ANTALYA RAIL SYSTEM PROJECTS**

ANTRAY designed four projects with a total length of 64.5 km and a number of 97 stations between 2013-2021 and put the light rail system lines into service in three routes as the 1st stage, the 2nd stage and the 3rd stage with a length of 53 km and 69 stations.

The project tender was made for the 4th stage between Konyaaltı-Varsak following the completed 3rd stage rail system project between Varsak-Museum. The 4th stage, whose construction will start in 2023, will begin at the Port, pass through Konyaaltı-100 Yıl and Kızıllık, and connect to the 3rd stage

at the Gazi Boulevard. The 5th stage will begin at the Port and reach Lara and Kundu. Thus, Antalya will have a total of 90 km of light rail system line with the 4th and 5th stages. Tenders were held for the 15 trams to serve on these lines.

- **SAMSUN RAIL SYSTEM PROJECTS**

Following the public transportation activities started in 2010 with 16 vehicles on the 16 km Light Rail System line, Samsun Metropolitan Municipality has continued with 19 km of additional lines and 13 new trams. 10 Trams are planned to be purchased in 2023 in order to respond to increasing passenger demands. Thanks to the importance SAMULAŞ attaches to domestic production, the company prevented imports of 700 thousand Euros in 2022.

- **ESKİŞEHİR RAIL SYSTEM PROJECTS**

ESTRAM serves with 47 trams operating on a 55 km line consisting of 74 stations and 8 lines connecting city hospitals and universities. It is planned to extend the existing tram network in Eskişehir and create new lines. For the Eskişehir Technical University line, which is planned to be constructed in 2023, the feasibility works still continue and 15 trams are planned to be purchased to serve on this line.

- **KOCAELİ RAIL SYSTEM PROJECTS**

AKÇARAY, which was put into service with a ceremony in 2017, started to serve with a 14.8 km line and 11 stations between the Bus Station and Sekapark. Sekapark – Plajyolu, the second stage of the line, was put into service in 2019 with a total of 8 stations. In 2022, the extension works of the line to Kuruçeşme and City hospital started. 18 Durmazlar Panorama trams are operated at 15 stations on the Bus Station -Plajyolu tram line. The line is planned to open in the first half of 2023 with the addition of 1.2 km to the last stop of the Bus Station-Plajyolu tram line and the completion of Kuruçeşme station.

Mehmet Ali Paşa-City Hospital extension line having 5 stations and 3.1 km long will be put into operation in the 2nd half of 2023. 10 units of 100% low-floor trams are planned to be purchased for this line.

- **ADANA RAIL SYSTEM PROJECTS**

Adana M1 metro was opened in 2010 and serves with 36 LRT vehicles between Hospital and Akıncılar with a line length of 13.5 km and 13 stations. The 10.3 km-long Balcalı, additionally planned by Adana Metropolitan Municipality, and 9.5-kilometer-long 2nd stage Rail Transportation system are available.