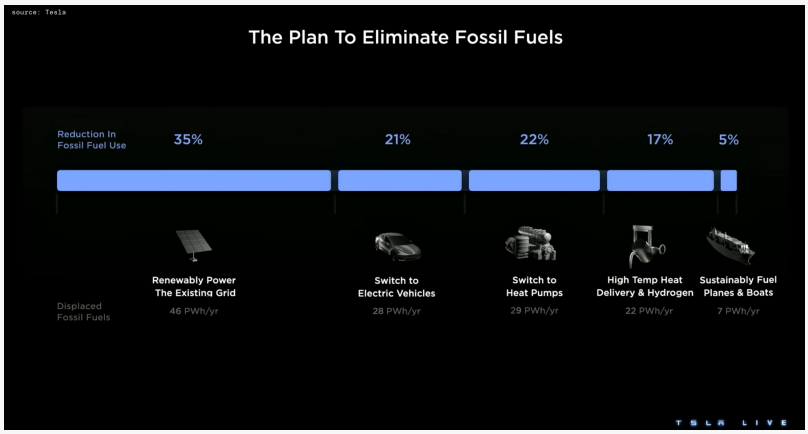
ZMS Walks You through Musk's $10 Trillion Plan and Its Impact on the Cable Industry

LOS ANGELES, CALIFORNIA, UNITED STATES, March 7, 2023 /EINPresswire.com/ -- At Tesla Investor Day, which ended on March 2, Elon Musk officially announced the third chapter of his ambitious plan, which has been previewed many times before - to embark on a fully sustainable energy road. Musk hopes that in the future, not only the automotive industry, but also the entire human society can adopt clean energy and eventually move towards a 100% sustainable energy society. These contents can be viewed in the "Tesla 2023 Investor Day" (https://www.youtube.com/watch?v=Hl1zEzVUV7w).

Master Plan 3



Musk's 5 Steps to Eliminate Fossil Resources

Specifically, Musk believes the plan will be divided into five phases. The first with renewable energy to power the existing grid, increasing the use of solar and wind energy. Secondly, the full transition from traditional cars to electric cars. Then promote heat pumps on a large scale in homes, businesses and industries. Then replace industrial heat with something like hydrogen. Finally, let the aircraft and ships also use sustainable energy, to achieve a sustainable energy transition of the whole society.

From this point of view, Tesla's goal is no longer just focused on the car industry, but a grand vision involving all of society. Musk's budget is $10 trillion, which is not a small amount. So this plan is more like a call to action for all of humanity to work together.

Five Steps to Moving Away from Fossil Energy to Truly Sustainable Energy

At the beginning of Tesla Investor Day, Musk first analyzed the current energy structure on the earth. He said that at this stage, 80% of the planet's energy comes from fossil energy, and only about 20% is clean energy. The disadvantages of over-reliance on fossil energy are very obvious. The Earth's population is growing, and the reserves of fossil energy are limited, so mankind must start exploring sustainable energy sources.

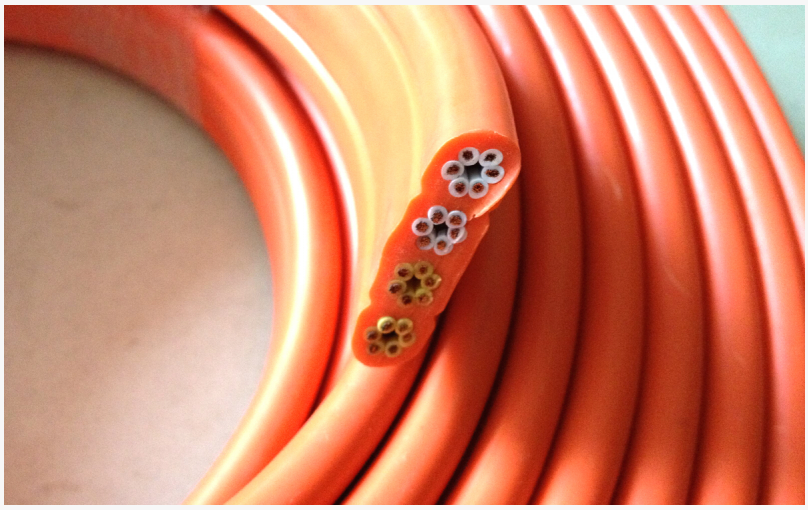
Renewable Clean Energy

The First Step

Musk said that the current development of clean energy is not comprehensive enough. There are places where the wind and solar energy conditions are very good. What's more, developing wind and solar energy doesn't take up much land area. Companies can build wind and solar power facilities in places like deserts, and even clean energy generation facilities in the oceans, which cover 70 percent of the planet.

Tesla's EV Charging

Musk envisions that the first step toward truly sustainable energy is to change the current energy mix. To build the grid through renewable energy sources and achieve a 35% reduction in fossil fuel use.



New Energy Special Cable

The Second Step

The second step is the mass production of electric cars. In Musk's view, compared with the engine, electric cars are more efficient. An interesting example was given at the launch event, namely that the energy used to boil water for pasta can be used to drive 1 km on the Model 3. Musk also

mentioned several times before, Tesla's goal is to achieve an annual production of 20 million new cars and reduce the use of fossil fuels by 21%.

The Third Step

In the third stage, the discussion focuses on the use of thermal energy. Musk proposes to promote heat pumps in homes, businesses, and industries on a large scale. Currently, home and industrial heating is mainly based on natural gas, which is also a fossil energy source. Musk believes that heat pumps can be used to heat homes and industries, and that the move could reduce the use of fossil fuels by 22 percent.

The Fourth Step

The fourth step is the transformation of industries. Industries at this stage have a high demand for thermal energy. And industries like steel require high-temperature furnaces to produce. Musk's solution is hydrogen energy, which he believes can reduce fossil fuels by 17% through industrial production.

The Fifth Step

The final step is the transformation of full-scale electrification. The current battery energy density is not enough to change the energy structure of aircraft and ships. Musk believes that in the future these vehicles should be electrically powered, and even in the aviation sector more electric systems could be used. In the future, humans can redesign airplanes and ships to make them more suitable for electrification. By doing so, there will be a 5% reduction in fossil fuels.

Is a Future of 100% Renewable Energy out of Reach?

With these five visions, Musk considers it possible to create a 100% sustainable energy planet. The whole plan will cost $10 trillion. However, Musk also admits that there is still some distance from this goal, and various developments also need to rely on the Earth's raw material resources.

According to Musk, human beings should use raw material resources more rationally to help achieve 100% sustainable energy. The development of resources should be carried out more efficiently and more green. It is also necessary to establish a perfect recycling mechanism to achieve high-quality sustainable development.

So is a future of 100% renewable energy out of reach? The 2022 Renewable Energy Report released by the International Energy Agency points out that renewable energy installations in various countries have accelerated significantly, driven by the energy crisis. And the global increase in installed capacity over the next five years is expected to be nearly double the previous five-year increase. The report predicts that between 2022 and 2027, global installed

renewable energy generation capacity will increase by 2,400 GW, accounting for more than 90% of the global electricity increase. By early 2025, renewables will overtake coal as the world's number one source of electricity.

Judging from this trend, renewable energy is indeed at a critical moment. And technologies such as solar and wind, which are central to the transformation of the global energy system, will be the mainstay of this phase.

But these energy sources also face a number of challenges. Wind and solar energy are intermittent in nature. This intermittency makes it difficult for wind and solar energy to remain stable and to smoothly output the required power. Statistically, even the most efficient wind and solar farms are only in optimal power generation 30% of the time. Therefore the storage and transmission control of electricity is also a direction that needs to be strongly developed.

The energy storage business is also one of Tesla's core businesses. Tesla is now actively building the Megapack product, which has been upgraded to the sixth generation. And it is also deploying 16GWh in 50 countries around the world, making very rapid progress. Tesla is also building charging stations around the world, which will be open to more car brands than just Tesla.

The Great Potential of the Special Cables for New Energy Industry

As a professional cable manufacturer, ZMS sees the great potential of special cables for new energy at a time when electrification has become irreversible. Special cables for new energy are applied to photovoltaic, wind power, electric vehicles, charging piles and energy storage and other fields. In the booming development of renewable energy, the special cable industry directly related to it will usher in huge development opportunities.

Renewable Energy Cable Industry Characteristics

1. Cyclicality

The development of new energy special cable industry is closely related to the development of photovoltaic industry, electric vehicle industry and other downstream industries. The cyclical nature of industry development is mainly influenced by downstream market demand.

In the field of photovoltaic, the new installed capacity of PV power plants is high during the period of rapid economic development and high government subsidies. In the period of economic development downturn, the new installed capacity of PV power plants is low. With the gradual promotion of PV parity access to the grid, the industry cyclicality tends to level off. In recent years, the new energy vehicle industry is still in the rising period of the industry, which does not reflect obvious cyclical characteristics for the time being.

2. Regional

Special cables for renewable energy industry downstream are mainly photovoltaic module manufacturers, automotive wiring harness enterprises, etc. Thus, the regional nature of the industry is related to the distribution of downstream customers and industry chain. At present, the countries that vigorously develop renewable energy are mainly concentrated in Europe, the United States, China and India. Cable industry giants are also focusing on these high-end cable market, prompting a gradual increase in global concentration, especially in mature markets. The automotive parts industry, including electric vehicle cables, also has a strong geographical presence.

3. Seasonality

The production and sales of new energy special cable industry is mainly affected by the seasonality of the downstream photovoltaic and electric vehicle industry. The prosperity of the photovoltaic power generation market directly affects the rise and fall of the photovoltaic industry chain. Under the condition that the support policies are stable, the PV power generation market scale and feed-in price are expected and guaranteed to be stable, and the PV cable industry does not show obvious seasonality.

Electric vehicle cable production and sales are heavily influenced by the production plans of the electric vehicle industry. Vehicle manufacturers usually increase production plans in the fourth quarter of each year to cope with the impact of reduced holiday production. And the second half of the year is generally a period of concentration of government subsidies and a clear period of subsidy policy for the coming year, so the new energy special cable industry generally has a higher sales scale in the second half of the year.

New Energy Cable Industry Technology Level

Cables are mainly used for electrical energy transmission, distribution and signal transmission. Its function is mainly realized through physical and electrical properties. The use environment and technical requirements of different fields have different requirements for the performance of supporting cables.

Photovoltaic Cables

Photovoltaic cables are exposed to the external natural environment for a long time, subject to strong ultraviolet radiation. They are also often in high temperature, low temperature, rain, snow, frost, humidity and pollution. And they need to withstand various mechanical external forces (such as gravity, traction, impact and wind vibration, etc.). Therefore, there are strict assessment standards for each performance of solar cables. In addition, since the required service life of PV modules is 25 years, the service life of the supporting PV cables is higher than that of ordinary cables.

Electric Vehicle Cables

The high-voltage cable inside the electric vehicle needs to be flexible, wear-resistant and corrosion-resistant. In addition to these, the following features are required.

1. High voltage resistance. The high-voltage cables of electric vehicles need to transmit the energy from the battery to each subsystem, so the cables must meet the high-voltage and high-current transmission.

2. Heat-aging resistant. As electric vehicle cables pass high currents for a long time, their power is high and much heat is generated, so they need to have strong heat resistance and be able to resist heat aging.

3. Electromagnetic compatibility. In order to avoid electromagnetic radiation to the surrounding equipment electromagnetic interference and resistance to external interference, EV high-voltage cables need to have anti-electromagnetic interference shielding structure, so as to ensure the safe and normal operation of electric vehicles.

4. Flame retardant. When an electric vehicle cable catches fire, it needs to be able to spread the flame within a limited range and extinguish itself within a limited time. Therefore, HV cables of EV also need to have good low-smoke flame retardancy.

Electric Vehicle Charging Cable

Electric vehicle charging cable is mainly used to connect new energy vehicles with charging posts. As it is under long-term exposure, it needs to have good physical and mechanical properties. In addition, there are higher requirements for the weight, flexibility and corrosion resistance of the cables. Moreover, with the development of electric vehicles, the EV charging cable also needs to have the role of transferring the corresponding battery power and overall information status of the charging vehicle to the charging post.

Technical Characteristics of the New Energy Cable Industry

The technical core of cable production includes three parts: material, structure design and preparation process. Materials directly affect product quality and yield rate. Product structure design affects the safety, reliability, wear resistance, tensile resistance and other comprehensive performance of the product and material consumption. The preparation process is the technical guarantee to realize the product structure design.

Due to the special characteristics of the use of the environment, photovoltaic and electric vehicle cables put forward higher requirements for the performance of cable materials and preparation processes.

The stability of the performance of photovoltaic and electric vehicle cables directly affects the efficiency of photovoltaic power generation and the safety and reliability of electric vehicle operation. Therefore, this special cable is subject to a number of performance tests, including structural dimensional inspection, conductor DC resistance test, finished product voltage test, insulation resistance test, insulation and sheath material performance test, ozone resistance test, thermal life test, acid and alkali resistance test, halogen-free smoke density test, etc.

ZMS's Vision for Total Renewable Energy

Musk's concept of a full transition to renewable energy is not just an unrealistic one in the eyes of ZMS Cable. To borrow Musk's words at the end of his speech, "We live on the planet and we are all investors in it. We can rely on scientific calculation and analysis to do something for the planet, not just imagination alone." Facing the renewable energy boom, ZMS will also take advantage of the wind and try to improve the production technology of special cables to make some contribution to the clean and sustainable development.

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