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Energy Recovery Ventilator Market- Global Industry Size, Share, Trends, Opportunities, and Forecast 2018-2028.Segmented By Type (Ceiling-Mount, Wall-Mount, Cabinet), By Technology (Plate Heat Exchanger, Heat Pipe Heat Exchanger, Rotary Heat Exchanger, Run Around Coil, Others), By Application (Commercial, Residential, Others), By Region and Competition

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Abstracts

Global energy recovery ventilator market is expected to grow during the forecast period, owing to the following factors including rising demand to reduce energy consumption in commercial and residential buildings, surging innovations in cost-effective energy recovery ventilators (ERVS), growth in the development of smart cities, increasing awareness for indoor air quality (IAQ), and increase in the construction of green buildings.

An energy recovery ventilator (ERV) is a type of mechanical equipment that features a heat exchanger combined with a ventilation system for providing controlled ventilation into a building.

Energy recovery ventilators are comparatively more expensive among all types of ventilation systems owing to their complex components and their installation process. The system has more maintenance intensity and consumes large electric power for running. Energy recovery ventilators allow a controlled path of ventilation to minimize energy wastage and transfers heat from the warm exhaust air to the cold supply. The factors such as reduced heating and cooling costs along with cost effectiveness in

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climates with extreme winters and summers are some of the major factors aiding the growth for the global energy recovery ventilator market. This system is generally preferred for commercial as well as industrial applications to reduce the overall building operational costs. Moreover, the system requires freezing protection in cold climates.

Global Energy Recovery Ventilator Market: Trends & Drivers

Rising Demand to Reduce Energy Consumption in Commercial and Residential Buildings

The residential sector consumes a significant amount of energy equivalent to one third of total primary energy resources available. Increase in building service demands and improvised lifestyle have further increased energy consumption. Thus, energy-efficient ventilation systems, such as energy recovery ventilation (ERV), can drastically save energy by reducing the demands for electricity and power for heating and cooling and providing appropriate ventilation to residential or commercial buildings. In addition, the ventilation system dries it before air enters, increasing its power to control humidity. Moreover, ventilation system improves indoor air quality and reduce energy consumption. Additionally, integrating a power recovery fan into the ductwork of a residential or commercial home can help ensure good ventilation.

The demands for energy recovery ventilators are further augmented for removing pollutants emitted by indoor sources. The high rates of air change can cause energy burden on a building’s heating or cooling needs. Ventilation accounts for 30% or more of space conditioning energy and has increased the demand to minimize ventilation rate, reduce energy, and ensure optimum indoor air quality. The proportion of airborne energy loss is much higher in buildings constructed at high standards of thermal insulation. The amount of energy consumed is dependent on the flow rate of ventilation and the amount of air conditioning necessary to achieve thermal comfort. Additional energy is needed to drive energy recovery ventilators, cool air by refrigeration, and maintain humidity levels. Exponential growth in the rate of energy consumption and dissipation in the commercial and residential sectors has created an emphasis on energy conservation development, which has, in turn, increased the demand for energy recovery ventilators.

Surging Innovations in Cost-Effective Energy Recovery Ventilators (ERV)

The global energy recovery ventilation market is set to witness remarkable growth,

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driven by increasing advancements in energy recovery ventilation technologies. Leading manufacturers are investing significantly in designing and developing controlled ventilation systems that enable the transfer of heat from warm exhaust air to cold supply air. This innovative approach not only reduces energy costs but also enhances the efficiency of heating ventilation air. Moreover, the utilization of residual piping in limited energy recovery systems helps minimize expenses. Furthermore, the incorporation of efficient channels contributes to a reduced system pressure drop, leading to improved overall performance. The incorporation of embedded devices in energy recovery systems prevents it from freezing and reduces frost formation that can damage heat exchangers. This further decreases the maintenance costs. Increased focus on indoor climate has increased demand for turn-key heating, ventilation, and air conditioning (HVAC) solutions and integrated cooling methodologies. This is enabling the market vendors to invest in technologies that help to obtain good thermal comfort and indoor air quality in warm summer seasons.

The technological development in the HVAC industry is focused on cost cutting initiatives and improvements of existing technology. There is a growing demand for latent heat storage, with higher storage density and smaller temperature changes. The potential use of Phase Change Material (PCM) in HVAC solutions for thermal storage and temperature maintenance applications, innovations in the Next Generation Ventilation (NeGeV) to optimize system performance and cater to the ventilation and cooling demands for commercial and industrial sectors are among the factors bolstering the growth of the market. Further, energy recovery ventilators (ERVs) are witnessing significant developments and innovations that are expected to revolutionize the industry. These advancements aim to match current price levels while substantially reducing operating costs, resulting in substantial energy savings and a reduced carbon footprint. By offering energy consumption reductions ranging from 50% to 90%, ERVs are poised to become indispensable components of energy-efficient buildings. These factors, coupled with the growing demand for sustainable solutions, present lucrative growth opportunities for market players in the energy recovery ventilation sector.

Increasing Number of Smart City Initiatives

Growth in smart cities and green building initiatives is driving the energy recovery ventilators market. Stringent government regulations to reduce energy consumption and increased demands for sustainable building options has led to the construction of green buildings. Growing emphasis on indoor environmental quality (IEQ) in green buildings is increasing the installations energy recovery ventilators. There is a growing demand for the use of energy recovery ventilation, whole-house fans, and energy-saving exhaust

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fans among the green buildings to address ventilation, moisture control, and local exhaust, supply air filtration, radon protection, and contaminant control. Countries such as Sweden and Scotland are actively pursuing a smart city strategy.

For instance, the European Commission is funding the smart cities projects through the Horizon 2020 Research and Innovation Program. Dublin's smart city program enables regional authorities to engage with smart technology providers to improve city life. Such initiatives have subsequently surged the demand for energy recovery ventilators, which is significantly driving market growth.

Increasing Awareness for Indoor Air Quality (IAQ) to Boost Product Demand

The quality of the air is an important concern and is getting acknowledged in the present time. The deficient Indoor Air Quality (IAQ) creates an adverse impact on the health, cognitive function, productivity, and wellbeing of indoor occupants. Therefore, the demand for ERVs is anticipated to drive the market. It can continuously replace stale indoor air with fresh outdoor air. Additionally, it can remove pollutants, including excess moisture, household chemicals, optimize energy efficiency, minimize carbon footprint, and others.

Moreover, enhancing indoor air quality is a major challenge as the conditioning process demands high cost. To overcome such challenges, manufacturers introduced ERVs, which possibly reduced ventilation energy costs and amended outdoor air quality intake. Furthermore, government intervention to construct energy consumption buildings and policies related to carbon emissions for residential and commercial purposes are the driving factors for the growth of the global market.

Global Energy Recovery Ventilator Market: Restraints

Huge Initial Upfront Cost

High cost of procurement, installation, integration, and maintenance of energy recovery ventilators hinders the growth of the market worldwide. Improperly assembled and installed energy recovery ventilators in spaces with limited space will disrupt airflow, introducing dirty air and pollutants along with clean air. This requires additional air ducting which increases the cost and maintenance of the product. Exhaust ventilation systems and supply ventilation systems cause higher heating and cooling expenses, as they do not eliminate moisture from the outside air before it enters the building. The balanced ventilation system does not remove moisture before entering the room;

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however, they employ filters to eliminate dust of outside air, which further increases the operational costs. Balanced ventilation systems are more expensive because of applying two fans and duct systems. Inappropriate installation of a mechanical ventilation system, backing up mechanical ventilation for a critical facility, utility service interruption, and equipment failure are some factors that can increase the operational and maintenance cost of energy recovery ventilator, thereby hampering the growth of the market.

Market Segments

Global energy recovery ventilator market is segmented based on type, technology, application, and region. Based on type, the market is segmented into ceiling-mount, wall-mount, and cabinet. Based on technology, the market is segmented into plate heat exchanger, heat pipe heat exchanger, rotary heat exchanger, run around coil, and others. Based on application, the market is segmented into commercial, residential, and others. Based on region, the market is segmented into North America, Asia-Pacific, Europe, South America, and Middle East & Africa.

Market Players

Major market players in the global energy recovery ventilator market are Mitsubishi Electric Corporation, Daikin Industries Ltd., Carrier Corporation, Johnson Controls International, LG Corporation, Trane Technologies Plc, Nortek Air Solutions, LLC, Lennox International, Inc., Greenheck Fan Corporation, Fujitsu Limited.

Report Scope:

In this report, Global Energy Recovery Ventilator Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

Energy Recovery Ventilator Market, By Type:

Ceiling-Mount

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Wall-Mount

Cabinet

Energy Recovery Ventilator Market, By Technology:

Plate Heat Exchanger

Heat Pipe Heat Exchanger

Rotary Heat Exchanger

Run Around Coil

Others

Energy Recovery Ventilator Market, By Application:

Commercial

Residential

Others

Energy Recovery Ventilator Market, By Region:

North America

- United States
- Canada
- Mexico

Europe

- France
- Germany

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United Kingdom

Italy

Spain

Asia pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

South Africa

Saudi Arabia

UAE

South America

Brazil

Argentina

Colombia

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in Global Energy

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Recovery Ventilator Market.

Available Customizations:

Global Energy Recovery Ventilator Market with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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