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Cisco 8011-4G24Y4H-I Router

Life Cycle Assessment Summary: 8011-4G24Y4H-I & Previous Generation

Goal and Scope

This summary presents the GHG emissions associated with the production, transport, use phase and end-of-life (EOL) of Cisco’s 8011-4G24Y4H-I and previous generation routers. It is based on the *Life Cycle Assessment Report: Cisco 8011-4G24Y4H-I and Previous Generation Routers* which is in alignment with the International Organization for Standardization (ISO) Standards 14040 and 14044 on LCA (ISO, 2006) and can be found in the [Environmental Sustainability section of cisco.com](#). The underlying report and this summary have not been critically reviewed and are therefore not ISO-conformant.

Table 1: Technical Specifications of the Products

Technical Data	Previous Generation	8011-4G24Y4H-I
Product weight	5.5 kg	5.3 kg
Modeled product power ¹	200 W	150 W
Dimensions (H * W * D)	1.72 x 17.3 x 10.1 in	1.69 x 17.3 x 10.17 in

Note: ¹Modeled product power is estimated based on product function and assumed product use.

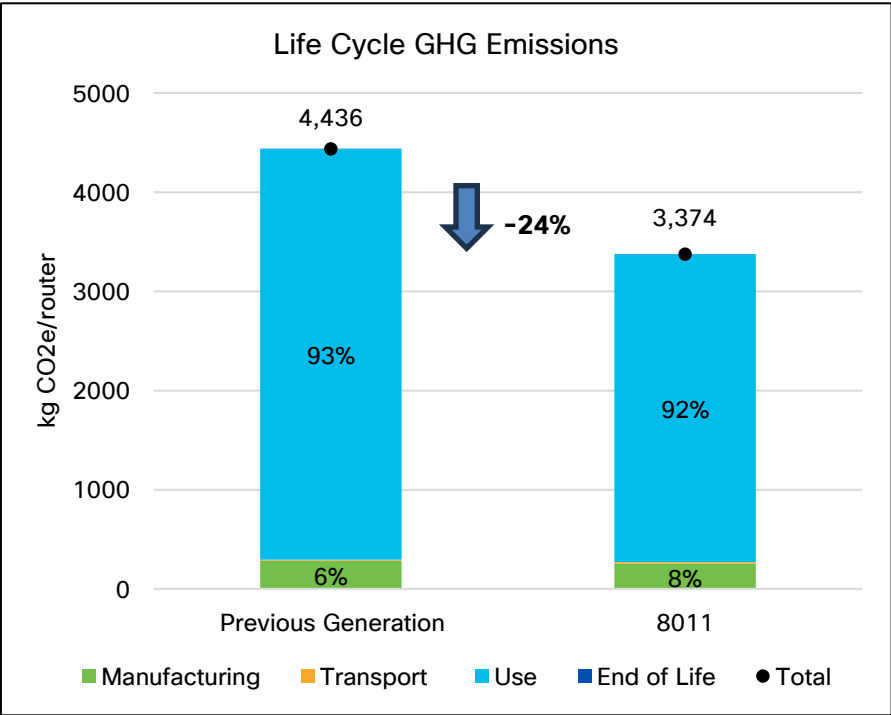
System Boundary

The model’s system boundary was from cradle-to-grave for the life cycle inventory (LCI) and impact assessment and included raw material extraction and refinement, material transport, component manufacturing, assembly, testing, delivery, use phase and EOL. The product is disposed of at its EOL assuming a 5 year lifespan. The study assumes most electronics production occurs in Asia and all material inputs were matched to datasets that are either global averages or Chinese datasets. Manufacturing was modeled specifically for China, the use phase was assumed to take place in the United States and EOL was assumed as a global average.

Results

The GHG emissions (according to IPCC AR6 GWP 100, excluding biogenic carbon) were 4,436 kg CO₂e per previous generation router and 3,374 kg CO₂e per 8011-4G24Y4H-I router. The use phase significantly influences the overall impact, contributing 93 percent and 92 percent of the total for previous generation and 8011-4G24Y4H-I routers, respectively. The manufacturing phase is the second-largest contributor to GHG emissions, accounting for 6 percent and 8 percent of total GHG emissions for previous generation and 8011-4G24Y4H-I routers, respectively. Within the manufacturing phase, key electrical components such as the PCBs and ICs were significant drivers, contributing 58 percent and 40 percent of

GHG emissions from all materials and components for the previous generation and 8011-4G24Y4H-I routers, respectively.



Note: Figures may not total 100 percent due to rounding of underlying data.

Life Cycle Phase	Previous Generation GHG Emissions (kg CO2e)	8011-4G24Y4H-I GHG Emissions (kg CO2e)
Manufacturing	284	254
Transport	12	15
Use	4,140	3,105
End of Life	0	0
Total	4,436	3,374

Limitations

There are a few key data limitations associated with electrical components and the use of secondary data for assembly and testing. Within the BOM, electrical components were matched to the components available in the LCA for Experts (formerly GaBi) and ecoinvent databases, which were not always an exact match. Proxied components were scaled by length and width or mass to reflect the number and type of components in the product under study.

Manufacturing burdens of the assembly and testing of the product were proxied using secondary datasets from ecoinvent. A limitation of the proxies is that they do not track operation improvements or changes over time.

Disclaimer: Data and other information in this report are estimates and indicative only, based on assumptions and approximations, for particular products and points in time. They are neither predictions, commitments or guarantees of actual outcomes nor intended for purposes other than identifying opportunities to improve the environmental performance of products at various points in their life cycle. Cisco and WSP continue to refine the methodology, modelling, and assumptions. Data and other information are therefore subject to change and uncertainties that are difficult to predict.

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Further information on Cisco's approach to Life Cycle Assessments (LCAs) is available at Cisco's Purpose Reporting Hub, at https://www.cisco.com/c/m/en_us/about/csr/esg-hub.html