

**Quieting the world by inducing  
a “Buy-Quiet” attitude  
among product purchasers**

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# Why encourage a “BUY-QUIET” attitude?

- An efficient and inexpensive solution to make our world quieter is to reduce sound at its source and by
- Developing a simplified label for the noise level of products which will encourage a demand for and an incentive to manufacture quieter products.



# The Situation Today (1)

Noise has a serious impact on the quality of life and the health of the world's citizens, and the situation has not improved.

During the last three decades, significant reductions have been made on some noise sources:

- Aircraft engines: -20 dB at constant power
- Consumer goods:
  - dishwashers: -20 dB
  - refrigerators, automobiles: -10 dB using existing technology

The increase in the number of sources in recent years has offset the noise reductions obtained for individual products.



## The Situation Today (2)

- The global situation has not improved.
- In Europe an increasing percentage of the population is complaining about noise.
- In the developing countries the situation is getting worse with an increasing population in urban areas.
- The world is becoming “global” and more and more noisy.

*If the number of sources is multiplied by ten, each source must be reduced by 10 dB in order to maintain current noise levels and by at least 15 dB in order to perceive a noticeable improvement.*



# Why are current noise policies ineffective? (1)

1. To be effective, a noise policy must consider all aspects of the problem:
  - Homes, environment, factories, recreational areas (community noise)
  - Work stations (occupational noise)
  - Products (product noise)
2. Numerous policies have been promulgated worldwide, but:
  - Have not been enforced or have been applied only locally
  - Have not been harmonized between jurisdictions, countries, or globally.



# Why are current noise policies ineffective? (2)

3. A policy must cover:
  - The noise sources (emission)
  - The noise receivers (immission)
  - The paths of noise transmission
4. Current policies place a priority on limiting the noise received by people (immission) and not on the control of noise emitted by products (emission).



# Policies based on noise immissions (1)

Aim to reduce noise in the environment by establishing limit levels in different areas (transportation routes, park areas, apartment complexes, offices, workshops, factory yards, discothèques). However, the noise reaching a receiver depends on:

- the number and location of all the noise sources and
- the transmission paths between sources and receiver

This makes it difficult to define responsibilities in order to meet the immission limits.



## **Policies based on noise immissions (2)**

- These are the most widespread policies internationally.
- Existing policies do not impose specific limits on the sources of noise.
- Their effectiveness is limited and they have not succeeded in controlling the increase in urban noise levels worldwide.



## **Policies based on noise emissions (1)**

- These policies set noise limits for sound sources (vehicles, machinery, household appliances, industrial equipment, and other products) in order to reduce their acoustic impact on different populations.
- The noise emitted by a source depends not only on its design but also on the mounting and operating conditions and, in many cases, source noise emission can be controlled by existing technology.

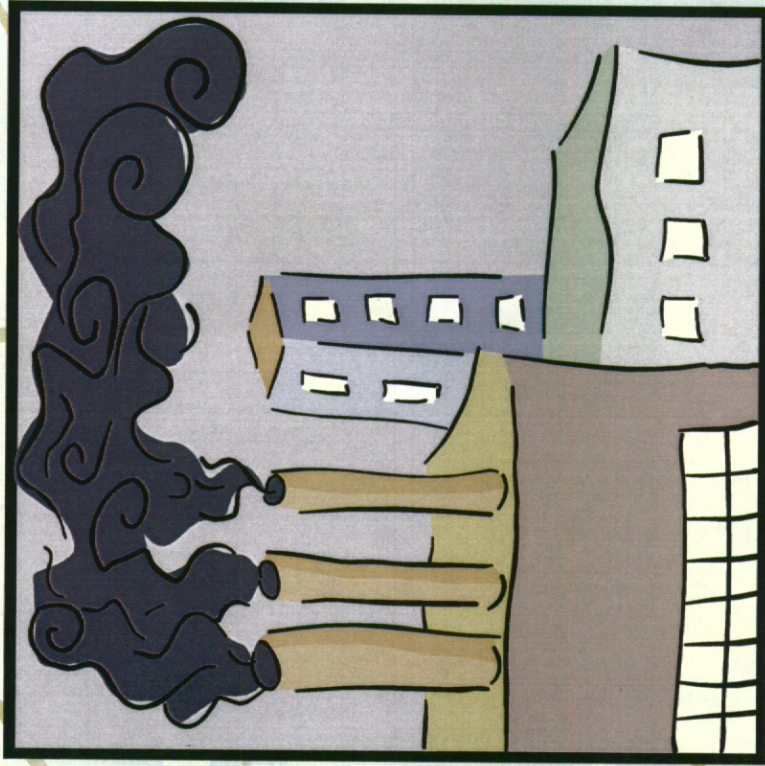


## Policies based on noise emissions (2)

- Source noise emission control is generally the most effective and least costly solution, e.g. changing the muffler on a vehicle is cheaper than insulating the facades of buildings in the city where the vehicle is driven.
- This approach has beneficial consequences:
  - In places of work (in industry, on building sites, and in offices)
  - In the environment (transportation, buildings, and leisure sites)



# Other pollutants ...



... are controlled by their emissions.  
Why not noise?



# Links between emissions and immissions

- Noise emission and noise immission policies should be strongly coupled, but they are not.
- Hence, it is not surprising that the public is unaware that a quieter environment can be achieved with the purchase and use of quieter equipment and products.



# Why noise emission policies have failed (1)

Those responsible for the formulation of noise policies, the policymakers:

- have a secondary interest in technology,
- were often limited in knowledge of acoustics and noise control, and
- often ignored the possibilities for noise reduction of products.

They have not focused their efforts on noise reduction at the source and are intimidated by its complexity and diversity.



# Why noise emission policies have failed (2)

Those responsible for reducing product noise at its source, the engineers:

- are passionate about their techniques,
- make little effort to explain and promote the importance of quieter components, and
- often are uninformed on regulations and have very limited influence on policy decisions.



# Why noise emission policies have failed (3)

Those affected by excessive noise levels, the public:

- are not informed in an understandable manner about product noise,
- are not educated in the selection of quieter products,
- are not involved in policy development but could have a key role,
- are generally unable to evaluate the regulations but continue to suffer or protest, and



# Why noise emission policies have failed (4)

Absence of effective product labeling:

- The desirability of a quiet product is infrequently emphasized in its marketing.
- When supplied, noise information cannot be compared to that of other similar products.
- On many products the only noise information presented is a maximum upper limit on the class of products, which eliminates effective competition.



# **Encouraging product noise reduction**

- Develop policies to promote the incorporation of quiet components during the design of a new product,
- Use a simplified label adapted for each category of product, and
- Create in the public and purchasing agents an attitude to “buy quiet.”



# Develop policies to promote quiet machinery and products (1)

Many are involved in policy development.

- Noise control engineers must work with policymakers and the media to emphasize the importance of policies based on noise reduction at the source to reduce noise immissions in the community.
- Those involved with standardization and regulations must develop practices which are straightforward and more effective.



# Develop policies to promote quiet machinery and products (2)

- National authorities should:
  - harmonize regulations on noise emissions of machinery and products internationally
  - establish realistic limits which can be reduced progressively
  - enforce regulations
  - carry out checks by competent laboratories
  - implement measures to prevent the importation of noisy products



# Develop policies to promote quiet machinery and products (3)

- Governmental agencies should lead by example in promoting “buy-quiet” activity.
- Manufacturers must be satisfied that low-noise products will have an international market advantage and be encouraged by the success of the “low-energy” campaign developed with simplified labeling of energy performance. They are encouraged to adopt a “buy-quiet” attitude and attach accurate noise specifications to new products.



# Develop policies to promote quiet machinery and products (4)

- Design engineers must be in a position to develop quieter products.
- Laboratories (public and private) must coordinate nationally and European manufacturers must agree to:
  - assemble noise level information on each product type
  - monitor products consistently
  - create databases by product type



# Develop policies to promote quiet machinery and products (5)

- Distributors must make available to all users and buyers the noise level information in an understandable manner for each different product.
- The media and consumer associations are encouraged to grant awards to manufacturers for outstanding low-noise products.



# A labeling scheme is needed (1)

Information on noise must be provided for:

- The different buyers
  - Consumers
  - Purchasing agents for industry
  - Purchasing agents for municipal services
- The various products
  - Heating, ventilating, air-conditioning equipment
  - Household appliances
  - Garden equipment, lawn mowers
  - Tooling, production machines
  - Construction, maintenance equipment





## **A labeling scheme is needed (2)**

- For the consumer – a simple label without decibels must inform without ambiguity the performance expected from the product. The labeling must be clear to allow comparison and a choice between various products.
- For the others – additional information for technical comparisons by knowledgeable buyers.

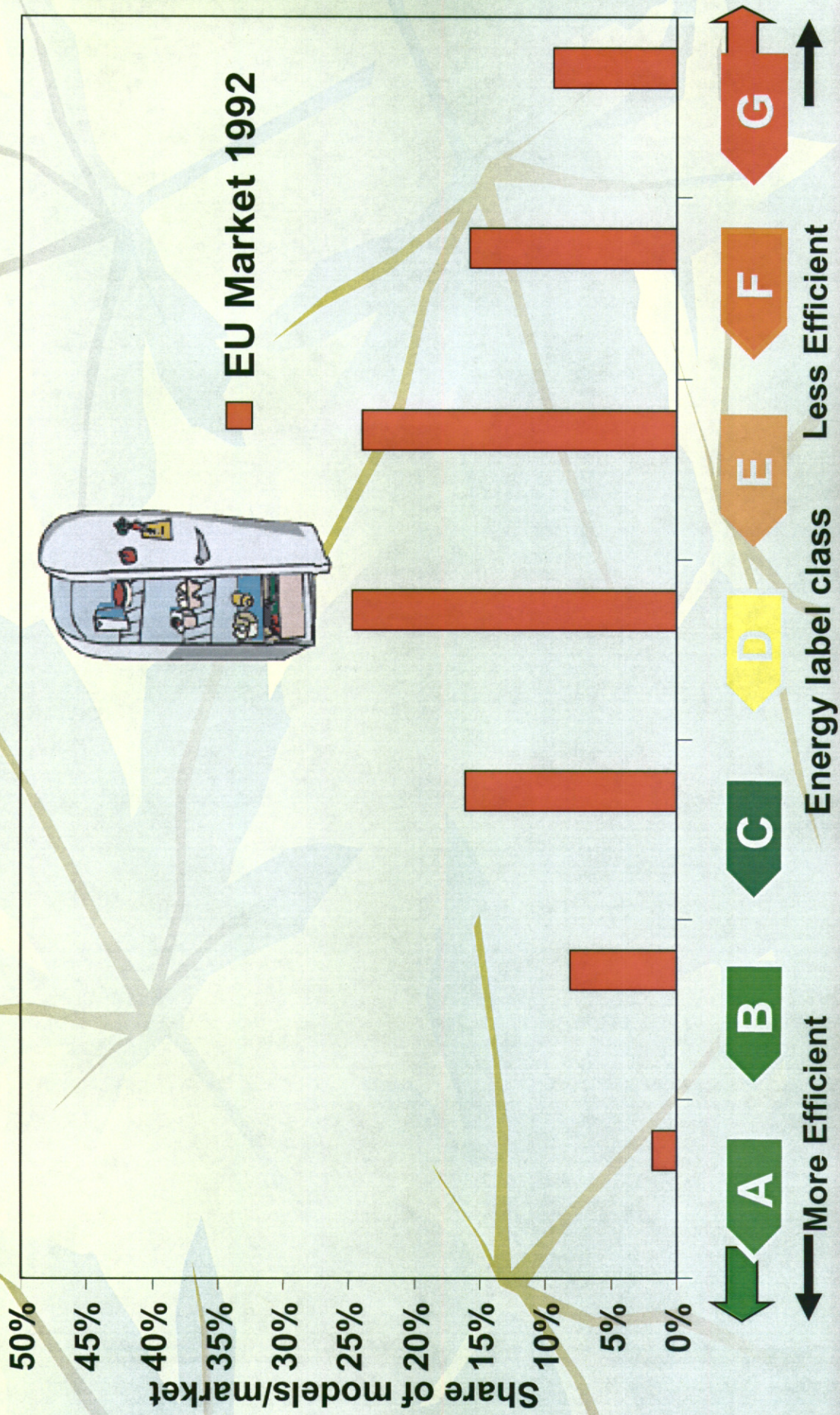


The EU refrigerator label  
grades energy efficiency  
from **A** to **G**

<p><b>Energy</b> Manufacturer Model</p>	<p><b>Vestfrost</b> BSFS 225</p>	<p><b>B</b></p>	<p><b>350</b></p>	<p>0 180</p>	
<p><b>More efficient</b></p>		<p><b>Less efficient</b></p>	<p><b>Energy consumption kWh/year</b> <i>(Based on standard test results for 24 h)</i></p> <p>Actual consumption will depend on how the appliance is used and where it is located</p>	<p><b>Fresh food volume l</b> <b>Frozen food volume l</b></p>	<p><b>Noise</b> (dB(A) re 1 pW)</p> <p>Further information is contained in product brochures</p> <p><small>Norm EN 153 May 1990 Refrigerator Label Directive 94/2/EC</small></p>

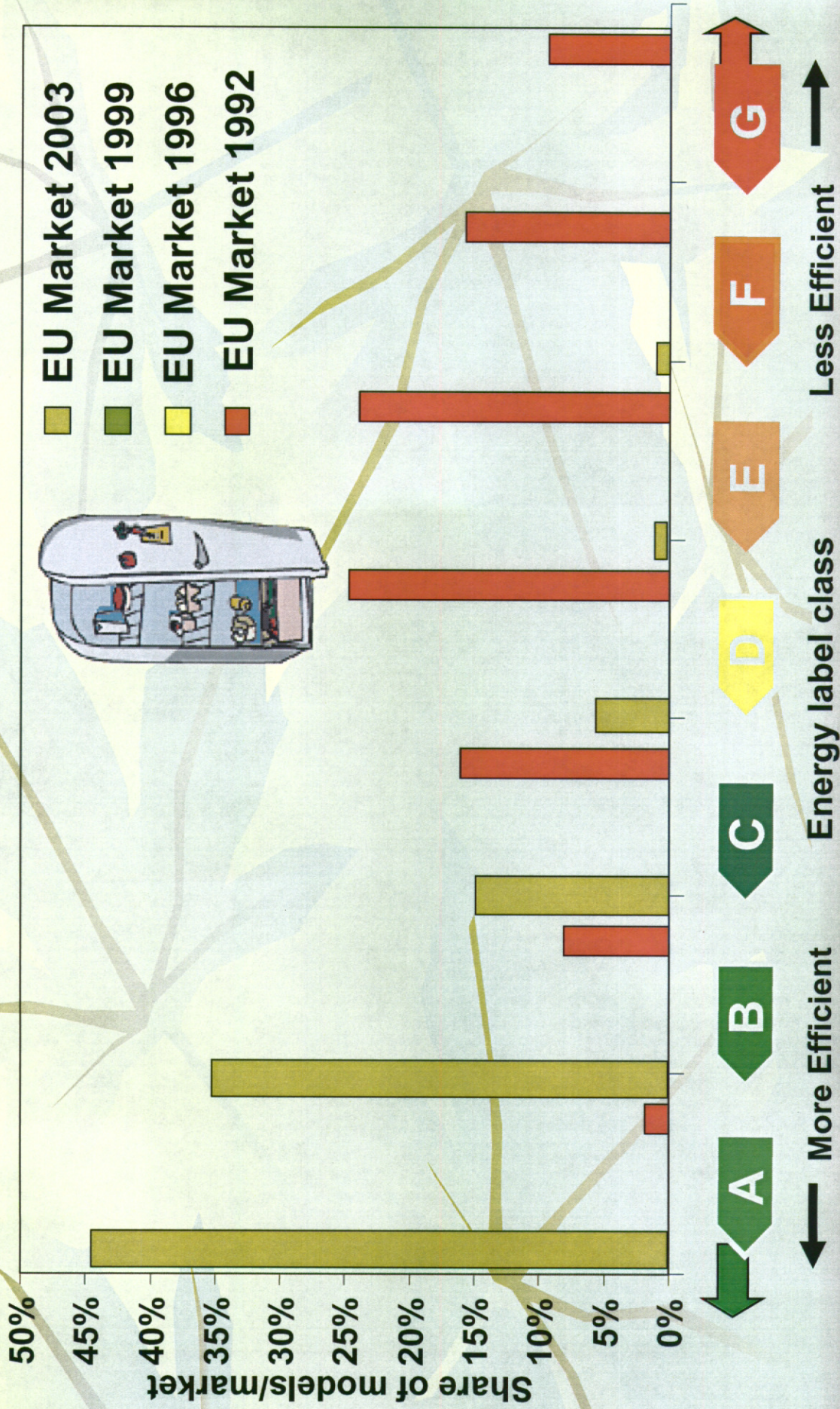


# Label impacts on EU refrigerator market





# Label impacts on EU refrigerator market





# Stimulating a “buy-quiet” attitude (1)

The public can be vitalized by emphasizing that it can:

- Demand a quieter environment (You do not need to be a bureaucrat or an engineer.)
- Demand quieter products (Existing quieter products are not necessarily more expensive and they are available.)

It is through public pressure that the demand for quieter products will unleash market forces and lead to a wider availability of quieter machinery and products.



# Stimulating a “buy quiet” attitude (2)

The media and associations (NGOs) need to:

- Better inform citizens and potential users about the need to use silent products and that they exist, including little-known facts (e.g. by using noisy products, the risk of deafness is increased and neighbors may be disturbed)...therefore “buy quiet.”
- Educate the associations of professional buyers on the advantages of buying quiet products.



# The need to “buy quiet” is global (3)

An attitude to “buy quiet” must be developed:

- For products used in all activities (homes, transportation, places of work and recreation, and industry)
- With all prospective buyers (consumers, professional buyers, decision makers).



# Thank you

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