

the **Lisbon** council

making Europe fit for the future

A Business Plan for Europe

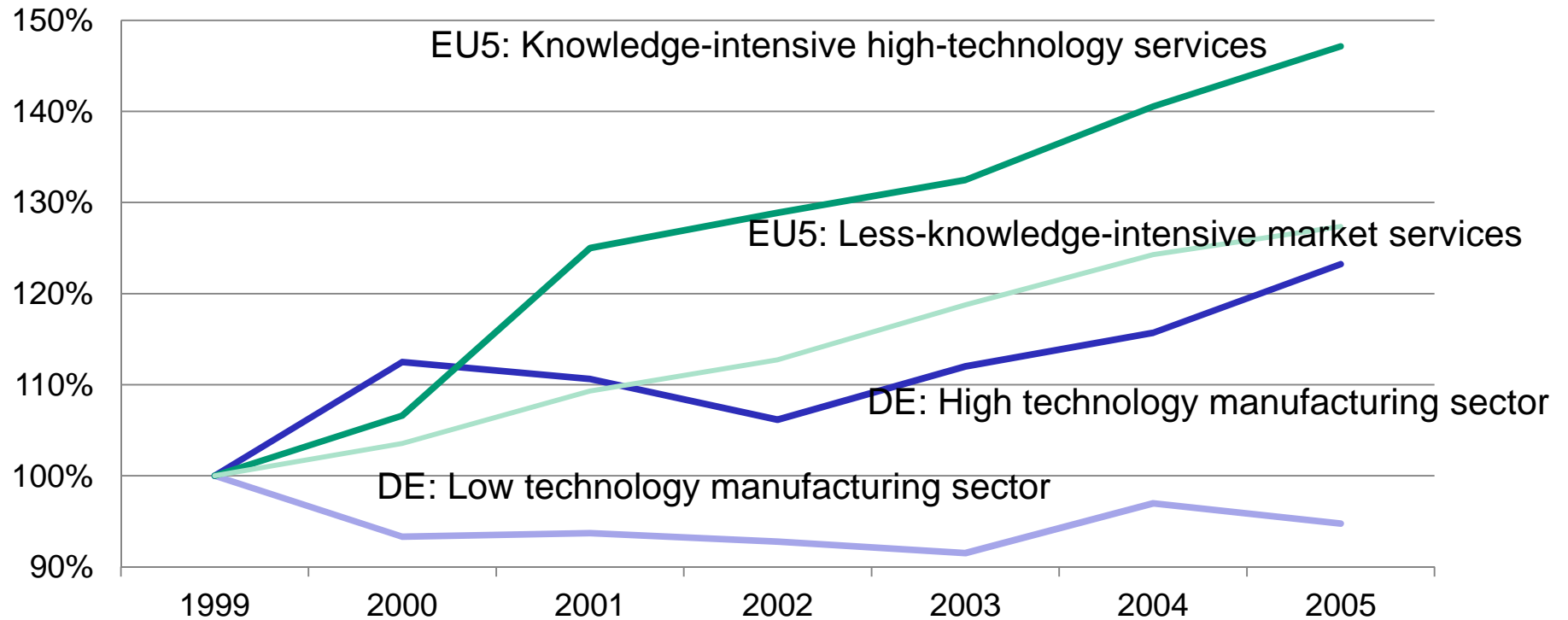
Brussels, April 20th, 2008

Peer Ederer, PhD

Director, human capital project, Lisbon Council

Economic growth is driven by knowledge

Sales of companies by sector 1999-2005



3 sectors for growth

Health Care

Education

Renewable Energy

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"Why do I have to learn how to write my name? I always pay for everything with cash."

Health

"The economic value of increases in longevity in the last hundred years is about as large as the value of measured growth in non-health goods and services."
(Nordhaus 2002)

"Cumulative gains in life expectancy after 1900 were worth over \$1.2 million to the representative American in 2000."(Murphy 2006)

"A 1 percent reduction in cancer mortality would be worth \$500 billion." (Murphy 2006)

Health

"Worldwide studies consistently find that health is a robust predictor of economic growth." (Suhrcke 2006)

"Policy-makers who are interested in improving economic outcomes would be justified in considering investment in health as one of the options by which to meet their economic objectives." (Suhrcke 2006)

Education

"The relation between health indicators and economic growth is in order of magnitude comparable to investment in education." (Schlander 2005)

"In the recent extensive robustness analysis [...] of 67 explanatory variables in growth regressions on a sample of 88 countries, primary schooling turns out to be the most robust influence factor on growth in GDP per capita in 1960-1996." (Hanushek 2007)

"The most valuable of all capital is that invested in human beings." (Alfred Marshall, *Principles of Economics*)

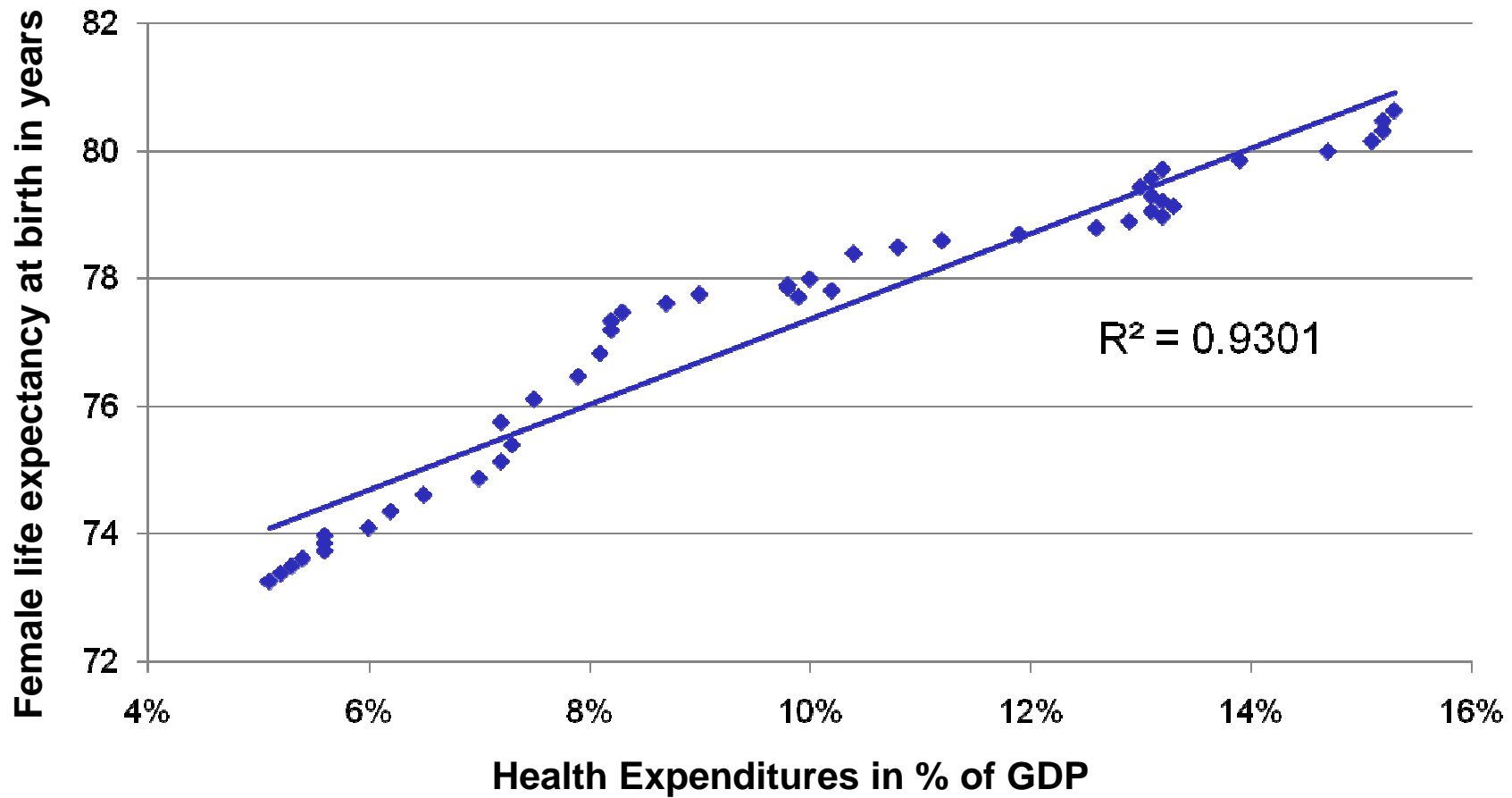
Energy

"Investing \$180 billion over the next decade to eliminate oil dependence and revitalize strategic industries can save \$130 billion gross, or \$70 billion net, every year by 2025." (Lovins 2005)

"Economic value may grow through the substitution of reproducible human inputs for natural inputs. The properties of knowledge, which is the primary human input, do not contradict unlimited new knowledge creation." (Smulders 1995)

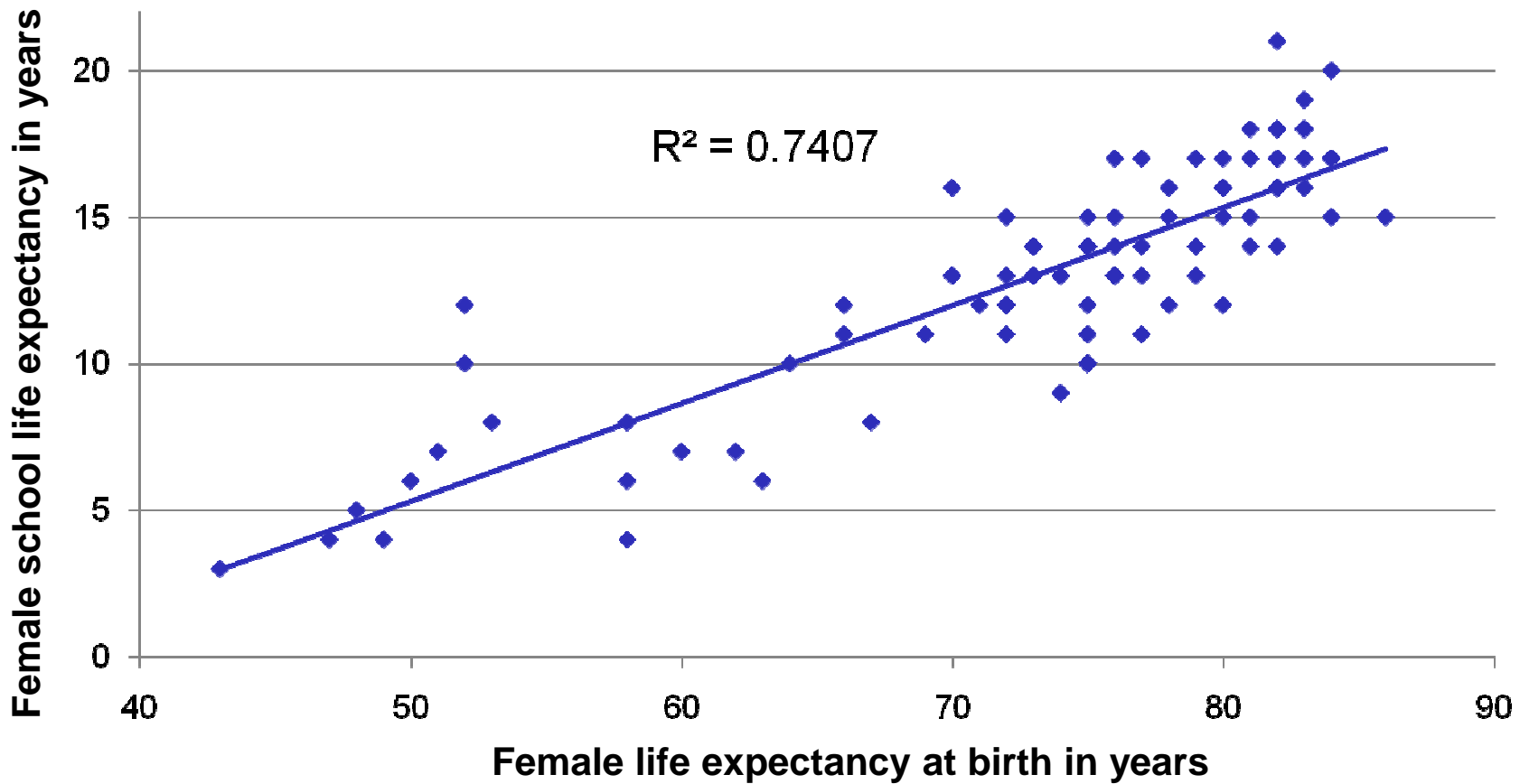
Higher expenditure induces increased life expectancy

US, 1960-2006



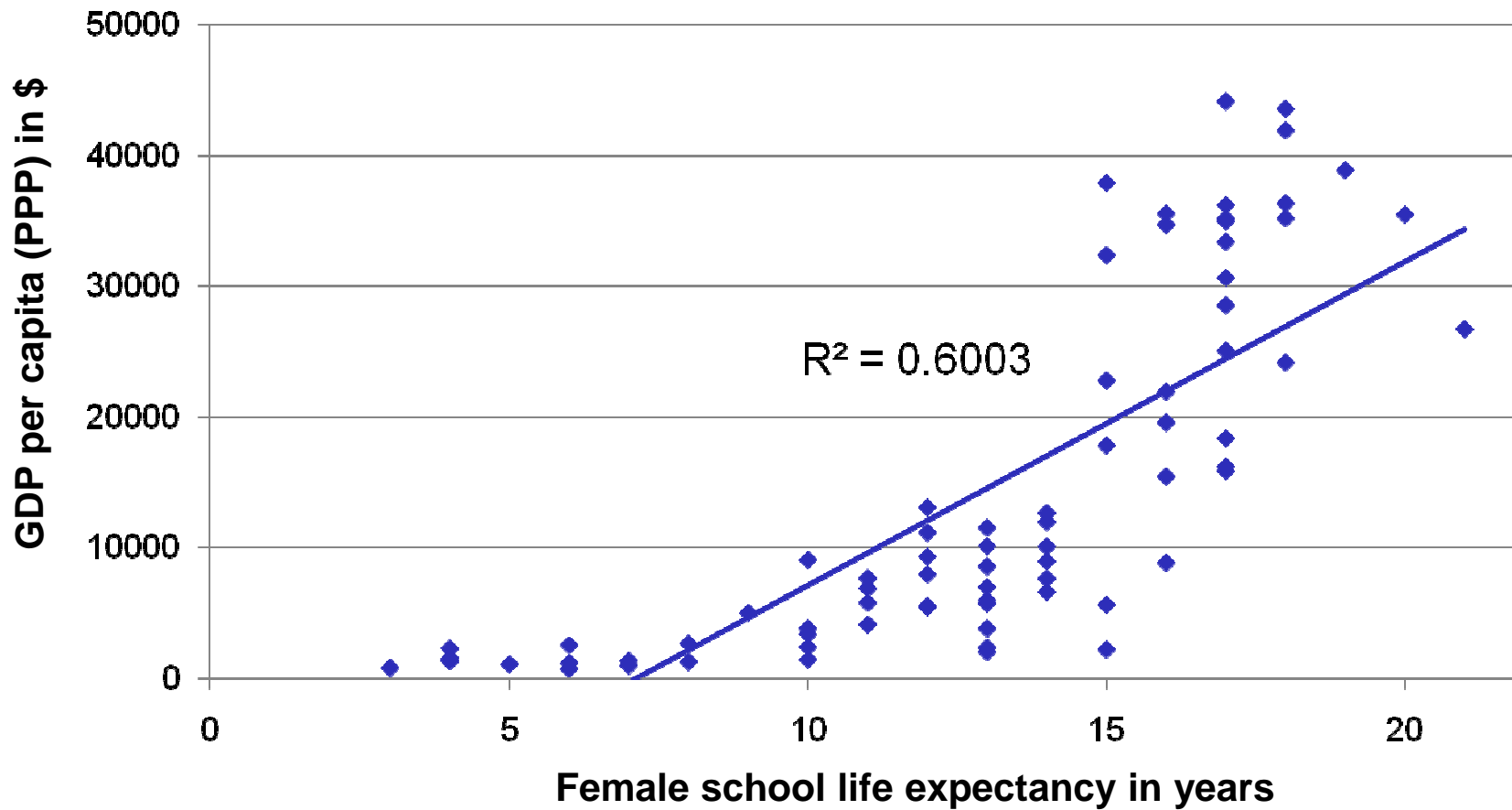
Increased life expectancy is related to more education

Selected representative countries globally, 2006



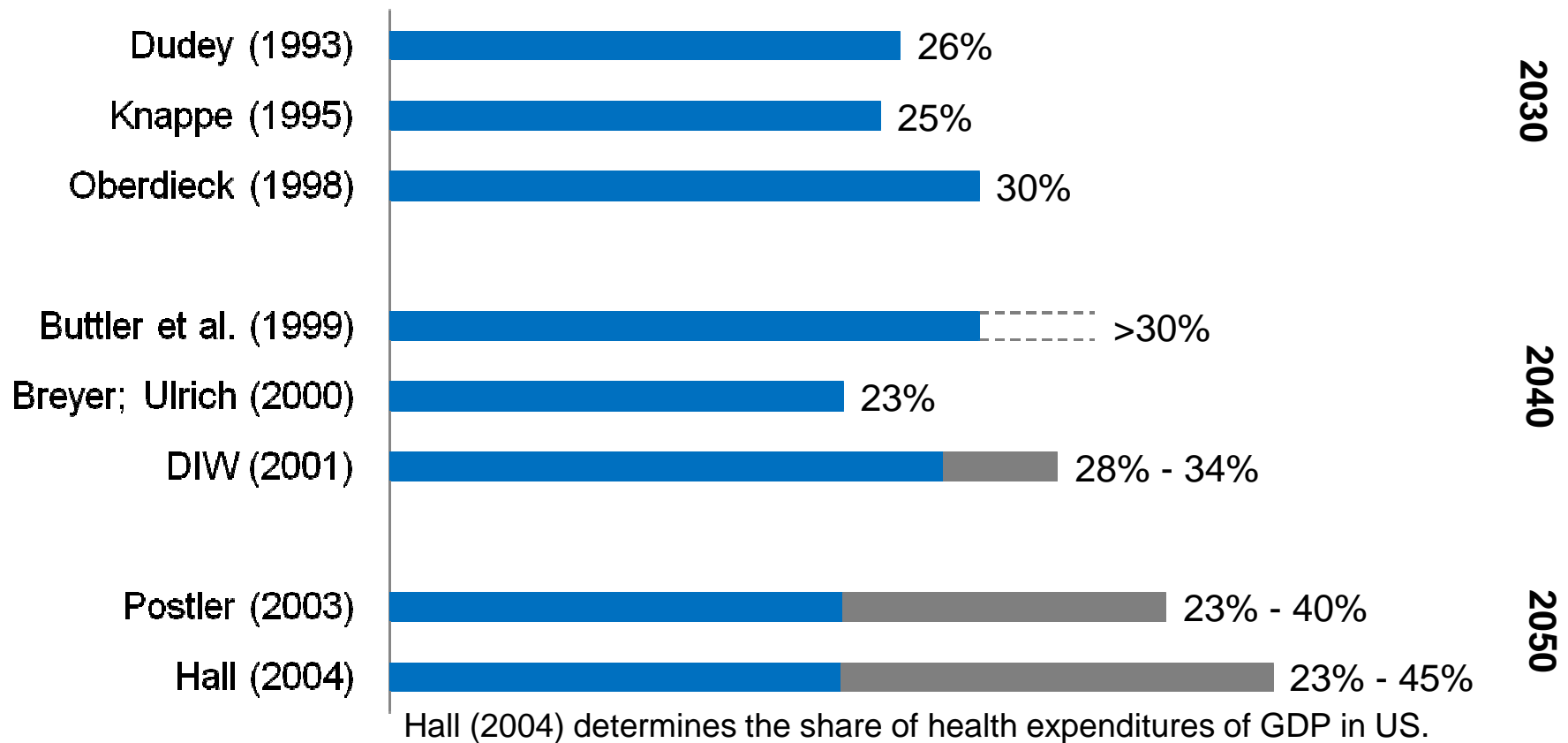
More education creates higher income

Selected representative countries globally, 2006



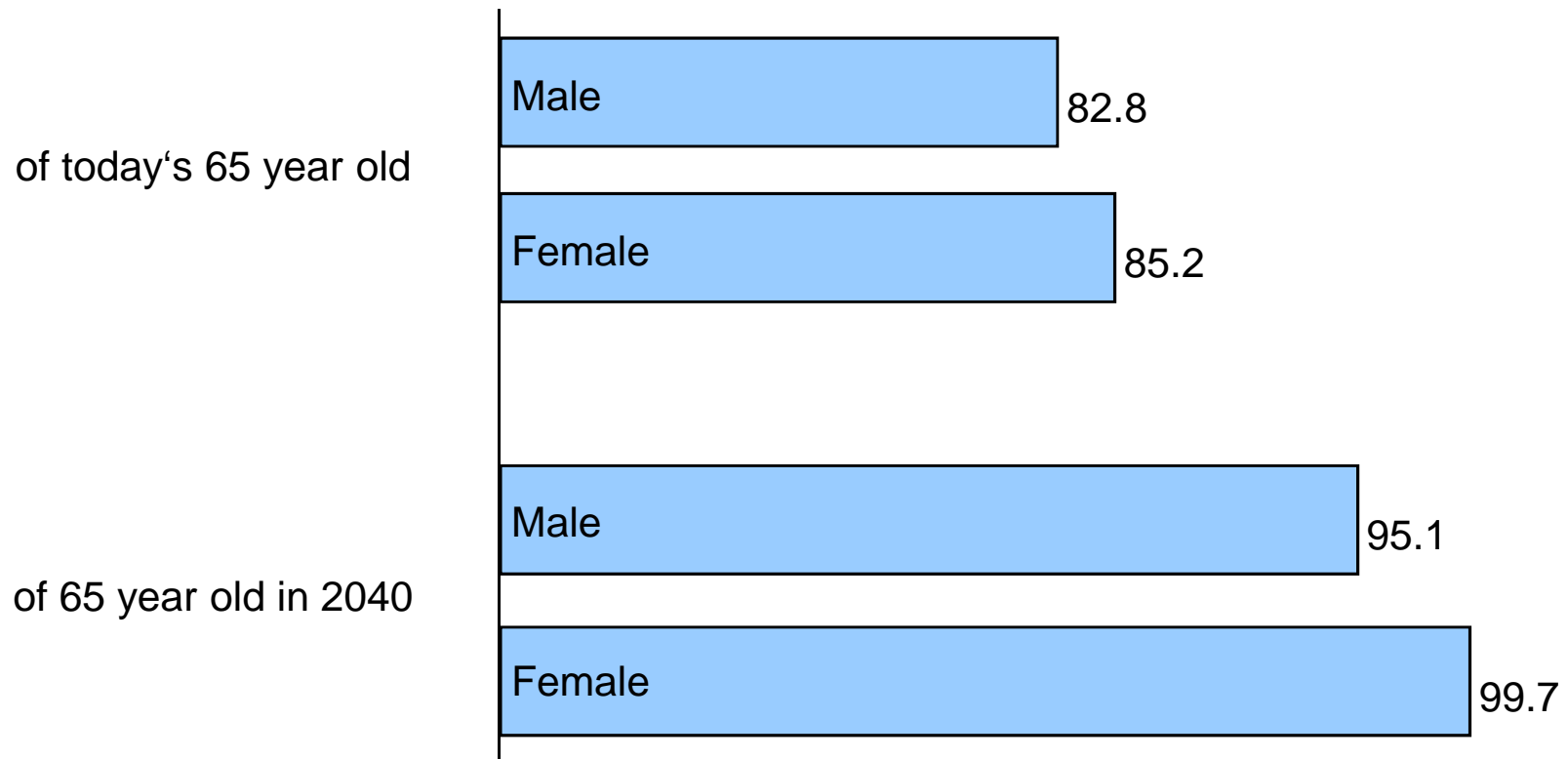
More income causes higher health expenditures

Projection of health expenditures as share of gross income in Germany



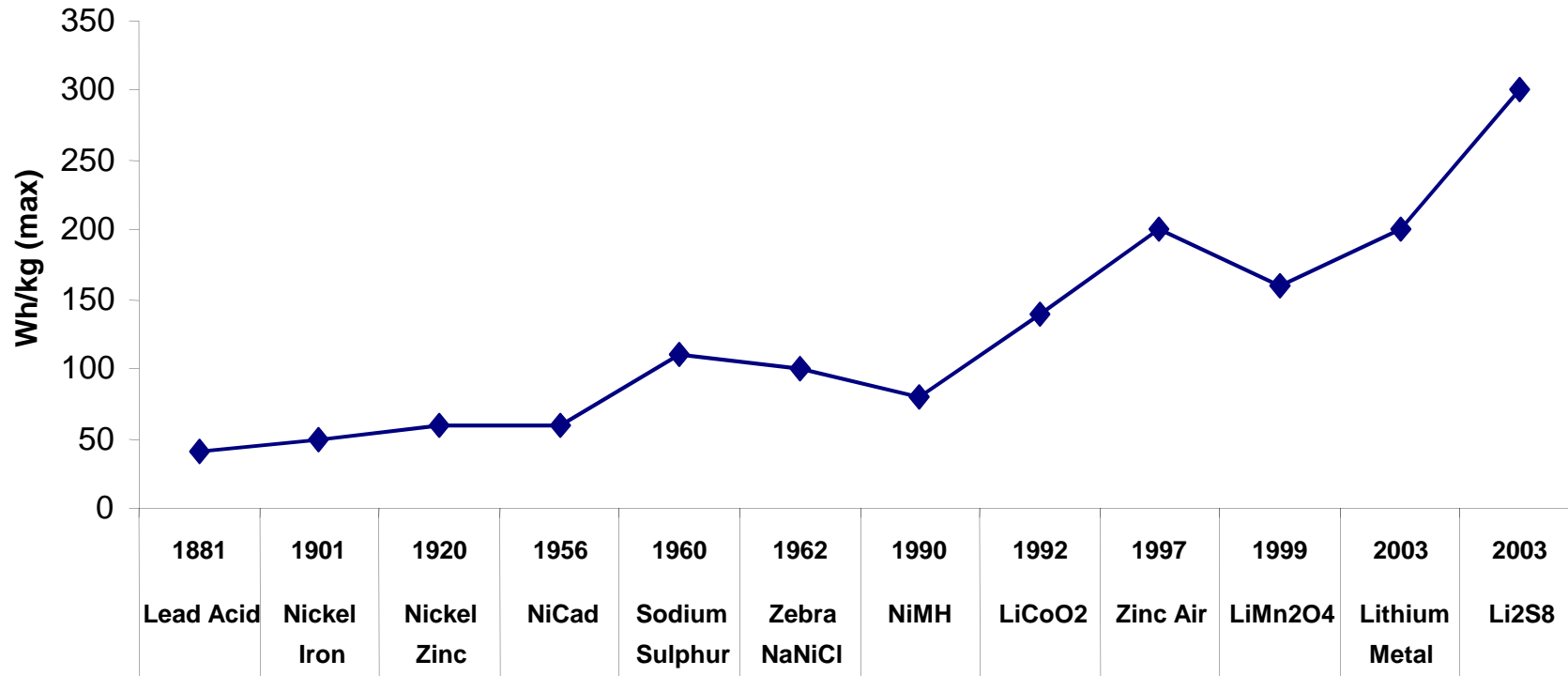
Life expectancy will rise sharply

Life expectancy of a 65-year old today and in 2040



Example: Electric drive is an innovation in the transportation sector

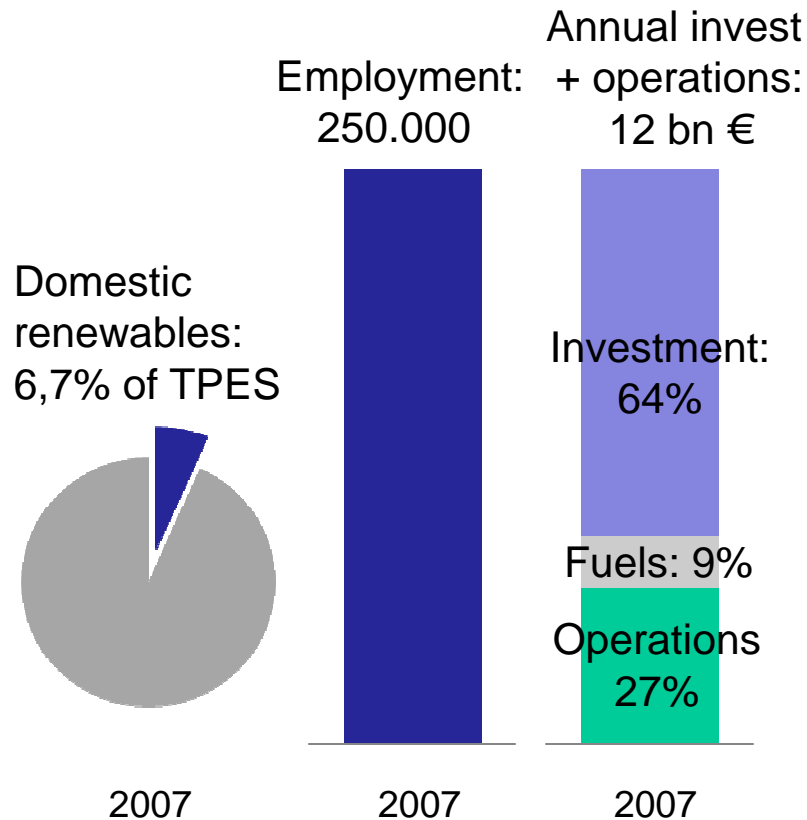
Type of battery, its maximal energy density and date of commercialization



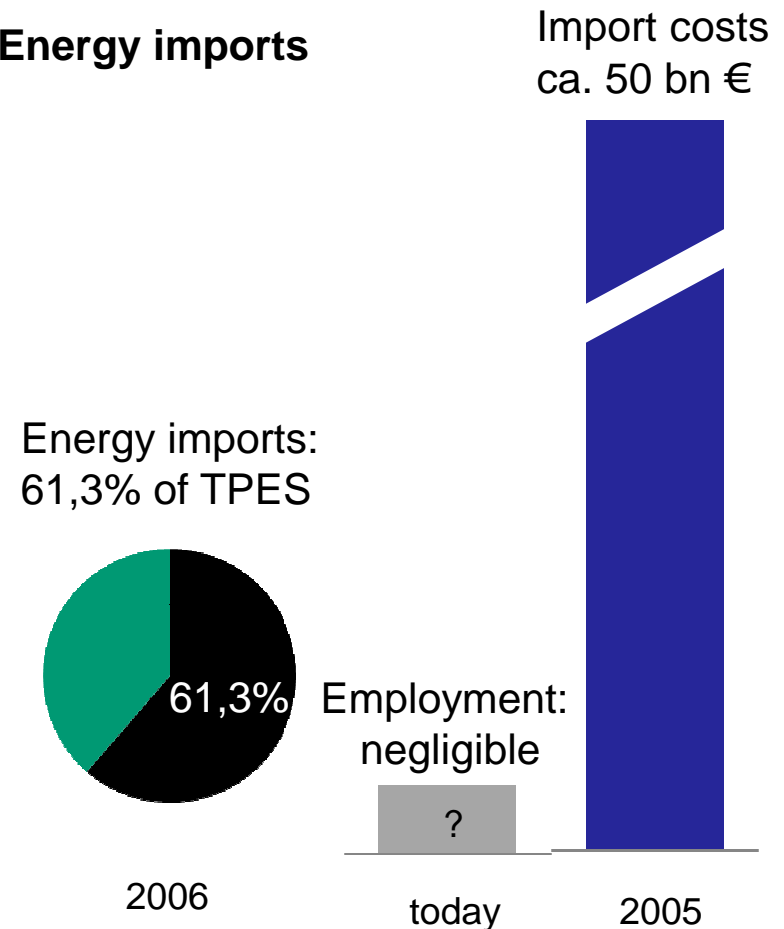
Renewable energy is primarily an economic opportunity

Energy supply, costs and employment in Germany

Renewables

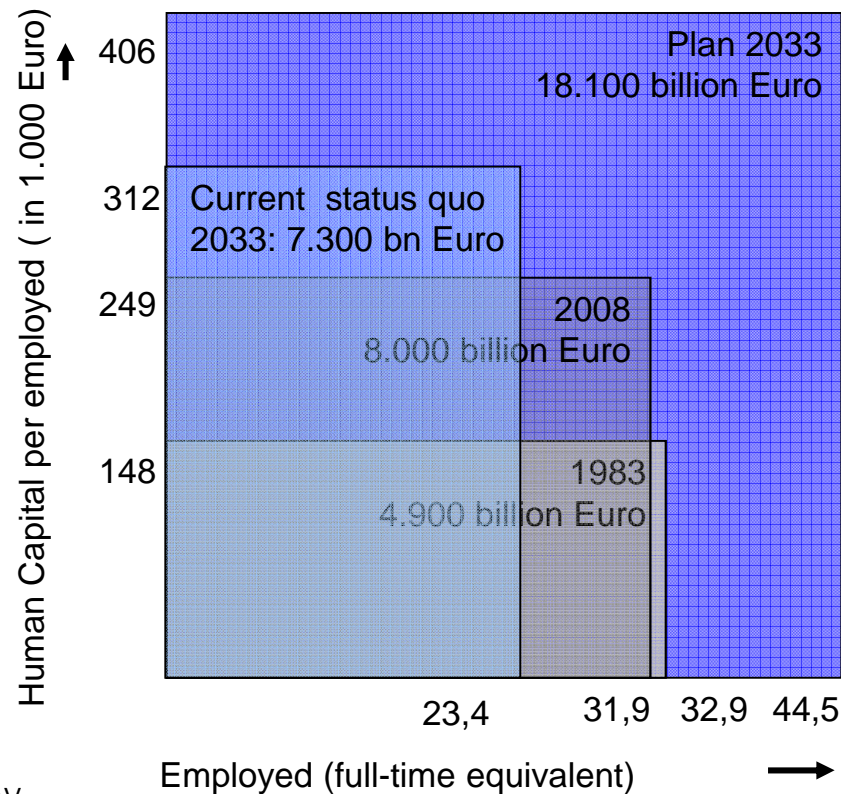


Energy imports



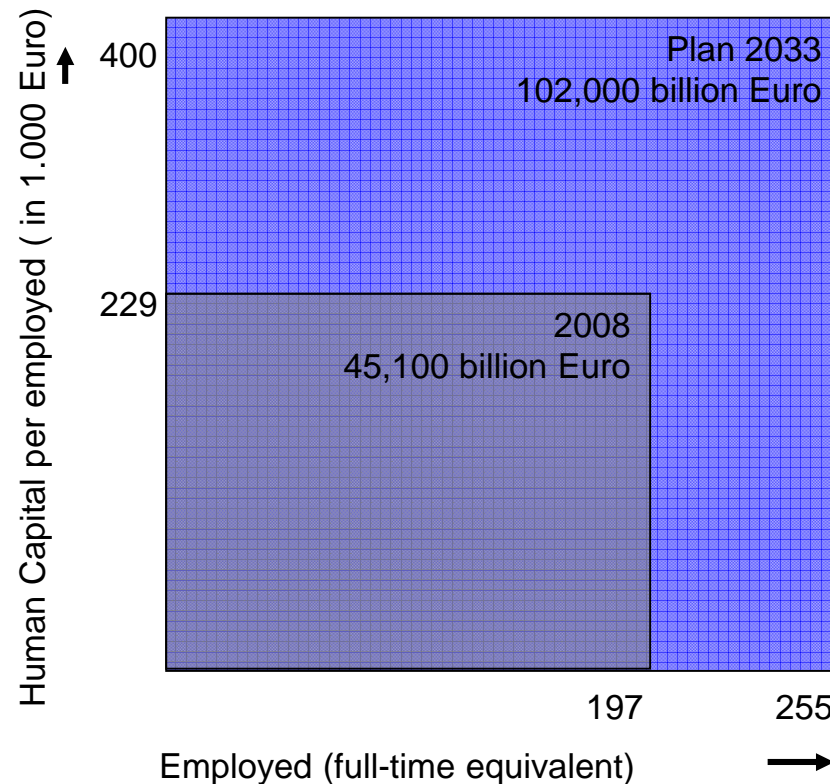
Germany requires a massive amount of human capital investments

Invested human capital 1983, 2008 and plan for 2033 in Germany



Europe requires a massive amount of human capital investments

Invested human capital 2008 and plan for 2033 in Europe



In 2033 Europe will have many more better jobs

Labor force by occupation, target structure based on extrapolation

Status Quo 2006

Management / Entrepreneur: 5,4%		
Professionals: 14,9%		
Technicians: 22,0%	Vocational: 15,1%	Commercial: 12,6%
Machine: 9,8%	Support: 7,9%	Service: 12,2%

Experts
20 → 40%

Specialists
50 → 40%

Basics
30 → 20%

Business Plan 2033

Management / Entrepreneur: 10%		
Professionals: 30%		
Technicians: 20%	Vocational: 10%	Commercial: 10%
Machine: 5%	Support: 5%	Service: 10%

Plenty new jobs for experts and managers

Change of occupational composition in percent of total labor force

