#### Comprehensive, inclusive and exclusive list for all potential energy resources in the topic

European Commission (Directorate-General for Energy and Transport (DG TREN)) January 2010 “EU ENERGY IN FIGURES 2010” http://ec.europa.eu/energy/publications/doc/statistics/part\_2\_energy\_pocket\_book\_2010.pdf

Primary Energy Production:

Primary energy production is the extraction of energy from a natural

source. The precise definition depends on the fuel involved:

Solid fuels: Hard coal, lignite

Quantities of fuels extracted or produced, calculated after any

operation for removal of inert matter. In general, production includes

the quantities consumed by the producer during the production

process (e.g. for heating or operation of

equipment and auxiliaries) as well as any quantities supplied to

other on-site producers of energy for transformation or other uses.

Crude oil:

Quantities of fuels extracted or produced within national boundaries,

including off-shore production. Production includes only marketable

production, and excludes any

quantities returned to formation. Production includes all crude oil,

natural gas liquids (NGL), condensates and oil from shale and tar

sands, etc.

Natural gas:

Quantities of dry gas, measured after purification and extraction of

natural gas liquids and sulphur. The production includes only

marketable production, and excludes any

quantities re-injected, vented and flared, and any extraction losses.

The production includes all quantities used within the natural gas

industry, in gas extraction, pipeline systems and processing plants.

Nuclear heat**:**

Quantities of heat produced in a reactor. Production is the actual

heat produced or the heat calculated on the basis of the gross

electricity generated and the thermal efficiency of the nuclear plant.

Hydropower, Wind energy, Solar photovoltaic energy:

Quantities of electricity generated. Production is calculated on the

basis of the gross electricity generated and a conversion factor of

3600 kJ/kWh.

#### Prefer ‘Primary energy production’ – including secondary energy production makes the topic huge

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What is primary energy? As the term suggests, it is primary as opposed to secondary energy production. Much of the energy we use at home in the form of electricity is secondary, produced in power stations by burning primary energy like coal or natural gas. And so to avoid double counting, the best way to get a handle on how much energy the world uses is to simply focus on primary energy. Nuclear and Hydro Power both produce electricity directly and so they are counted as primary energy. Similarly, wind, solar and geothermal produce electricity directly and may also be counted as primary energy.

**And, only a substantive and limited discussion enables an actively engaged citizenry – allows for the type of education that matters**

**NCSS, 07** [“A Vision of Powerful Teaching and Learning in the Social Studies: Building Social Understanding and Civic Efficacy”, national council on social studies, <http://www.socialstudies.org/positions/powerful>]

Rationale The last decade of the twentieth century and the first decade of the twenty-first have seen a marginalization of social studies curriculum, instruction, and assessment at all grade levels. In many state houses, in departments of education and in school districts across this great nation, education for citizenship has taken a back seat to education for career and college. As Judith L. Pace wrote in Education Week in December 2007, “… the data point to a social studies divide, caused by the confluence of high-stakes accountability and school segregation by race and class.” [1](http://www.socialstudies.org/positions/powerful#note1) She affirmed the view, widely held by social studies educators, that “… depth of historical, political, and cultural understanding” is essential if this democracy is to survive and thrive. Powerful social studies teaching helps students develop enduring understandings in the core content areas of civics, economics, geography, and history, and assures their readiness and willingness to assume citizenship responsibilities. Powerful social studies learning leads to a well-informed and civic-minded citizenry that can sustain and build on democratic traditions. Purpose This position statement presents a vision of social studies teaching and learning needed to achieve the levels of civic efficacy that the nation requires of its citizens. It does not outline a K–12 social studies program nor does it suggest any particular curricular scope and sequence. The emphasis is on principles of teaching and learning that have enduring applicability across grade levels, social studies core content areas, and scope-and-sequence arrangements. These principles are summarized in this declaration: Teaching and learning in social studies are powerful when they are meaningful, integrative, value-based, challenging, and active. The vital task of preparing students to become citizens in a democracy is complex. The social studies disciplines are diverse, encompassing an expansive range of potential content. This content engages students in a comprehensive process of confronting multiple dilemmas, and encourages students to speculate, think critically, and make personal and civic decisions based on information from multiple perspectives. A powerful and rigorous social studies curriculum provides strategies and activities that engage students with significant ideas, and encourages them to connect what they are learning to their prior knowledge and to current issues, to think critically and creatively about what they are learning, and to apply that learning to authentic situations. A Guiding Vision: The Goals of Social Studies Teaching social studies powerfully and authentically begins with a deep knowledge and understanding of the subject and its unique goals. Social studies programs prepare students to identify, understand, and work to solve the challenges facing our diverse nation in an increasingly interdependent world. Education for citizenship should help students acquire and learn to use the skills, knowledge, and attitudes that will prepare them to be competent and responsible citizens throughout their lives. Competent and responsible citizens are informed and thoughtful, participate in their communities, are involved politically, and exhibit moral and civic virtues. Qualities of Powerful and Authentic Social Studies A. Social Studies Teaching and Learning Are Powerful When They Are Meaningful Meaningful social studies builds curriculum networks of knowledge, skills, beliefs, and attitudes that are structured around enduring understandings, essential questions, important ideas, and goals. Key concepts and themes are developed in depth. The most effective social studies teachers do not diffuse their efforts by covering too many topics superficially. Breadth is important, but deep and thoughtful understanding is esdents for the issues of twenty-first century citizenship. Skills necessary to help our students thrive in a world of continuous and accelerating change are emphasized. These include discipline-based literacy, multi-disciplinary awareness, information gathering and analysis, inquiry and critical thinking, communication, data analysis and the prudent use of twenty-first century media and technology. Skills are embedded throughout meaningful social studies lessons, rather than added on at the end. Teachers are reflective in planning, implementing, and assessing meaningful curriculum. Reflective teachers are well informed about the nature and purposes of social studies, have a continually growing understanding of the disciplines that they teach, and keep up with pedagogical developments in the field of social studies. Meaningful curriculum includes extensive and reflective study of the United States and other nations’ histories, religions, and cultures. B. Social Studies Teaching and Learning Are Powerful When They Are Integrative The subjects that comprise social studies--i.e., history, economics, geography, political science, sociology, anthropology, archaeology and psychology--are rich, interrelated disciplines, each critical to the background of thoughtful citizens. The social studies curriculum is integrative, addressing the totality of human experience over time and space, connecting with the past, linked to the present, and looking ahead to the future. Focusing on the core social studies disciplines, it includes materials drawn from the arts, sciences, and humanities, from current events, from local examples and from students’ own lives. Each of the social studies disciplines themselves integrates content from the others. Units and lessons can draw on ideas from economics, geography, history, political science, and sociology to increase understanding of an event or concept. Each disciplined pursuit demands a level of sensitivity and awareness to content drawn from the arts, humanities, and sciences. Powerful social studies teaching combines elements of all the disciplines as it provides opportunities for students to conduct inquiry, develop and display data, synthesize findings, and make judgments. Social studies teaching and learning requires effective use of technology, communication, and reading/writing skills that add important dimensions to students’ learning. C. Social Studies Teaching and Learning Are Powerful When They Are Value-Based Social studies teachers recognize that students do not become responsible, participating citizens automatically. The values embodied in our democratic form of government, with its commitment to justice, equality, and freedom of thought and speech, are reflected in social studies classroom practice. Social studies teachers develop awareness of their own values and how those values influence their teaching. They assess their teaching from multiple perspectives and, when appropriate, adjust it to achieve a better balance. Students are made aware of potential policy implications and taught to think critically and make decisions about a variety of issues, modeling the choices they will make as adult citizens. Students learn to assess the merits of competing arguments, and make reasoned decisions that include consideration of the values within alternative policy recommendations. Through discussions, debates, the use of authentic documents, simulations, research, and other occasions for critical thinking and decision making, students learn to apply value-based reasoning when addressing problems and issues. Students engage in experiences that develop fair-mindedness, and encourage recognition and serious consideration of opposing points of view, respect for well-supported positions, sensitivity to cultural similarities and differences, and a commitment to individual and social responsibility. D. Social Studies Teaching and Learning Are Powerful When They Are Challenging Student work should reflect a balance between retrieval and recitation of content and a thoughtful examination of concepts in order to provide intellectual challenges. The teacher must explain and model intellectual standards expected of students. These include, but are not limited to: clarity, precision, completeness, depth, relevance, and fairness. Challenging social studies instruction makes use of regular writing and the analysis of various types of documents, such as primary and secondary sources, graphs, charts, and data banks. It includes sources from the arts, humanities, and sciences, substantive conversation, and disciplined inquiry. Disciplined inquiry, in turn, includes the teaching of sophisticated concepts and ideas, and in-depth investigation of fewer rather than more topics, with deep processing and detailed study of each topic. Challenging social studies includes the rigorous teaching of the core disciplines as influential and continually growing tools for inquiry. E. Social Studies Teaching and Learning Are Powerful When They Are Active Active lessons require students to process and think about what they are learning. There is a profound difference between learning about the actions and conclusions of others and reasoning one’s way toward those conclusions. Active learning is not just “hands-on,” it is “minds-on.” Students work individually and collaboratively, using rich and varied sources, to reach understandings, make decisions, discuss issues and solve problems. Student construction of meaning is facilitated by clear explanation, modeling, and interactive discourse. Explanation and modeling from the teacher are important, as are student opportunities to ask and answer questions, discuss or debate implications, and participate in compelling projects that call for critical thinking. Powerful social studies teachers develop and/or expand repertoires of engaging, thoughtful teaching strategies for lessons that allow students to analyze content in a variety of learning modes. Conclusion Thomas Jefferson and other founders of the republic emphasized that the vitality of a democracy depends upon the education and participation of its citizens. The need for an informed citizenry was the very impetus for the creation of free public education in the United States. If the nation is to develop fully the readiness of its citizenry to carry forward its democratic traditions, it must support progress toward attainment of the vision of powerful social studies teaching and learning.

**And, this is the largest theory impact – our potential involvement as citizens is the only way to check nepotism, enable dignity and self-sufficiency and allow for successful policies – independent voting issue**

**OSUFS, 92** [Ohio State University Fact Sheet, “Citizen Participation In Community Development”, <http://ohioline.osu.edu/cd-fact/l700.html>]

Volunteer groups function as links between individuals and larger societal structures (Bellah et al. 1985, Kornhauser 1959). What are the benefits to the average citizen? Bridges (1974) cites five advantages to be gained from active participation in community affairs:

The citizen can bring about desired change by expressing one's desire, either individually or through a community group.

The individual learns how to make desired changes.

The citizen learns to understand and appreciate the individual needs and interests of all community groups.

The citizen learns how to resolve conflicting interests for the general welfare of the group.

The individual begins to understand group dynamics as it applies to mixed groups.

Heberlein (1976) notes that public involvement results in better decisions. He argues that community decisions that involve citizens are more likely to be acceptable to the local people. Better community decisions, by definition, should be beneficial to the average citizen.

Citizen participation in community affairs serves to check and balance political activities. Participation allows fuller access to benefits of a democratic society (Wade 1989). Partisan political favors, pork barreling, and nepotism are negative examples of unchecked political behavior. A cross section of citizen participation in the decision-making process reduces the likelihood of community leaders making self-serving decisions.

Cahn and Camper (1968) suggest there are three rationales for citizen participation. First, they suggest that merely knowing that one can participate promotes dignity and self-sufficiency within the individual. Second, it taps the energies and resources of individual citizens within the community. Finally, citizen participation provides a source of special insight, information, knowledge, and experience, which contributes to the soundness of community solutions. The result is an emphasis on problem solving to eliminate deficiencies in the community (Christensen & Robinson 1980).

Cook (1975) notes that citizen participation can legitimize a program, its plans, actions, and leadership. To legitimize can often mean the difference between success and failure of community efforts. Unsupported leaders often become discouraged and drop activities that are potentially beneficial to community residents. Voluntary participation can also reduce the cost for personnel needed to carry out many of the duties associated with community action. Without this support, scores of worthwhile projects would never be achieved in many communities.

Additional reasons could be cited to emphasize why citizens should participate in community decisions. However, the case is rested with these. In summary, decision making that is delegated by others will not always be in the best interest of an individual and his or her neighbors. Community betterment is a product of citizen involvement.

**The depth of education outweighs, key to educational success in a globalized world**

**WP, 09** [Washington Post, “Will Depth Replace Breadth in Schools?” http://voices.washingtonpost.com/class-struggle/2009/02/will\_depth\_replace\_breadth\_in.html]

The truth, of course, is that students need both. Teachers try to mix the two in ways that make sense to them and their students. But a surprising study — certain to be a hot topic in teacher lounges and education schools — is providing new data that suggest educators should spend much more time on a few issues and let some topics slide. Based on a sample of 8,310 undergraduates, the national study says that students who spend at least a month on just one topic in a high school science course get better grades in a freshman college course in that subject than students whose high school courses were more balanced. The study, appearing in the July issue of the journal Science Education, is “Depth Versus Breadth: How Content Coverage in High School Science Courses Relates to Later Success in College Science Coursework.” The authors are Marc S. Schwartz of the University of Texas at Arlington, Philip M. Sadler and Gerhard Sonnert of the Harvard-Smithsonian Center for Astrophysics and Robert H. Tai of the University of Virginia. This is more rich ore from a goldmine of a survey Sadler and Tai helped organize called “Factors Influencing College Science Success.” It involved 18,000 undergraduates, plus their professors, in 67 colleges in 31 states. The study weighs in on one side of a contentious issue that will be getting national attention this September when the [College Board’s Advanced Placement program](http://www.collegeboard.com/student/testing/ap/about.html) unveils its major overhaul of its college-level science exams for high school students. AP is following a direction taken by its smaller counterpart, the [International Baccalaureate program](http://www.ibo.org/). IB teachers already are allowed to focus on topics of their choice. Their students can deal with just a few topics on exams, because they have a wide choice of questions. AP’s exact approach is not clear yet, but [College Board](http://www.collegeboard.com/) officials said they too will embrace depth. They have been getting much praise for this from the [National Science Foundation](http://www.nsf.gov/), which funded the new study. Sadler and Tai have previously hinted at where this was going. In 2001 they reported that students who did not use a textbook in high school physics—an indication that their teachers disdained hitting every topic — achieved higher college grades than those who used a textbook. Some educators, pundits, parents and students will object, I suspect, to sidelining their favorite subjects and spending more time on what they consider trivial or dangerous topics. Some will fret over the possibility that teachers might abandon breadth altogether and wallow in their specialties. Even non-science courses could be affected. Imagine a U.S. history course that is nothing but lives of generals, or a required English course that assigns only Jane Austen. “Depth Versus Breadth” analyzes undergraduate answers to detailed questions about their high school study of physics, chemistry and biology, and the grades they received in freshman college science courses. The college grades of students who had studied at least one topic for at least a month in a high school science course were compared to those of students who did not experience such depth. The study acknowledges that the pro-breadth forces have been in retreat. Several national commissions have called for more depth in science teaching and other subjects. A 2005 study of 46 countries found that those whose schools had the best science test scores covered far fewer topics than U.S. schools.

#### Second, Precision - Separating primary and secondary forms of energy is key to overall energy policy – precision outweighs

Sara Øvergaard (Senior Executive Officer in the Department on Energy Statistics at Statistics Norway) September 2008 “Issue paper: Definition of primary and secondary energy” <http://unstats.un.org/unsd/envaccounting/londongroup/meeting13/LG13_12a.pdf>

The ability to separate primary and secondary energy is important in energy statistics. The Energy Balance is set up to record the flow of new energy entering the system of national energy supply, its transformation and losses until end use. To avoid double counting, it is important to be able to separate new energy entering the system, (primary) and the energy that is transformed within the system (secondary). Internationally agreed definitions on primary and secondary energy are therefore important in order to compare Energy Balances. A consistent differentiation between primary and secondary energy is also useful in energy planning when developing long-range policies and for energy analysts who are concerned with broader energy or environmental issues, such as conversion losses, transmission losses, distribution, energy efficiency measures and carbon emissions from energy sources. When defining primary and secondary energy, it is important that the definition is operational and founded on the laws of physics. The definitions must be operational, meaning that it should be helpful for statisticians enabling them to make a clear and consistent division between primary and secondary energy based on information about the sources that the energy is embodied in and the processes that it has been part of. The definition of primary and secondary energy should be founded on physics, and not on the ability of statisticians to measure or record it. For example, in the OECD/IEA/Eurostat, Energy Statistics Manual2, the major difference between the Eurostat and the IEA Energy Balance format lies in the presentation of the production of primary and secondary fuels. Statisticians can for example due to measurement problems choose to assume that the actual mechanical energy taken from a hydro source is equal to the electric generated energy, but this should not influence the fact that hydro is a primary energy source, and that the electricity produced from this source is secondary energy.