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Inconvenient Data: The Need for an International Climate Data Registry

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Data Quality is Everyone's Business

No discussion of climate change proceeds far without recognizing the critical role of observational data in shaping perceptions and conclusions about the state of the climate and how it is changing. Whether the focus is on a seemingly simple question as "what is the temperature trend?" or a more complex question, such as "how is the human impact on climate distinguished from natural forces?", data on temperature on land, in the oceans and in the layers of the atmosphere, cloud formation, precipitation patterns, land-use changes, changing atmospheric composition, and much more, shape our understanding of how our complex climatic system operates.

Given the importance that climate data has assumed in determining the course of the public policy debate, the public should be reasonably confident that this data is accurate, open, available to any scholar, and subject to intense scrutiny and criticism. Such steps are needed to ensure the reliability of the data and the usefulness of the findings derived from it. The stakes are that high. The U.S. taxpayer will bear the cost of remediation, and that cost will be based on the climate data used to establish climate change parameters. Unfortunately, it appears that much of the information upon which the Congress is basing impending climate-related action is art and opinion, not valid scientific data.

Among many definitions of data quality, J.M. Juran provides the best for this issue: data are of high quality "…if they are fit for their intended uses in operations, decision making and planning…." That use should be reasoned decision making, not emotional posturing. During the 2007 Senate Environment and Public Works Committee markup of the climate bill S. 2191, "America's Climate Security Act of 2007," numerous amendments were offered. One of those rejected amendments, the "International Climate Data Registry," deserves a closer look if Congress is seeking a stronger policy linking climate regulation and climate science. The full text of this amendment is provided as an Appendix, and its importance for future climate policy is the subject of this paper.

Science and Quality Data Are Linked

Legislation for mandatory emission controls which is circulating in Congress links policy to science. It is important to point out that science is not a static canon of data and interpretations, but a methodology. Science is the observation, identification and experimental investigation of phenomena, which, when scrupulously carried out, provides a sound foundation to shape public policy. This concept is not new. As science continues to explore and understand the phenomena of nature, policy also changes. For example, improved scientific understanding of lead and asbestos toxicity led to laws and regulations to protect human health. In the science of stem cell research, public policy has sought to constrain scientific exploration which probes into the very origins of human life itself. Climate policy *must* require scientific validation through agreement on data quality standards, not political and emotional consensus.

Simply put, the qualification and veracity of data used in building bridges, calculating corporate finances, and reporting national student graduation rates is

more rigorous than that in the data used in climate models whose input is driving crucial public policy. The "data" input to climate models is intended to allow the models to project temperatures, precipitation, major storms, and changes in the climate parameters. To do so, both the data and the models must be accurate and valid. How can we trust the model output if the input is questionable? Climate modeling is proving the old adage, "Garbage in, garbage out."

Data

At issue is the application of the same rigor in data quality, pedigree, validation, and archiving to climate science that other established disciplines require. For example, publicly held companies such as bridge construction companies have auditable documentation, not because people are inherently dishonest, but because they are using other peoples' money or because other peoples' lives are at risk. Current climate research is driving public policy that will cost taxpayers billions of dollars, and so climate science must rise beyond the work of a single "principal investigator" at a university. The field must produce data that can be audited and archived at a higher standard than the current scientific peer review process.

First, let us examine data quality control in regard to climatology. Climate investigators now use climate proxies such as temperature records estimated from tree rings, glacier entrapments, and lake bottoms as inputs to climate models. Currently there is no standard for certifying these proxies, public storage of the data, or comprehensive assessment of the relationship of the proxy to the phenomenon of interest. Without confidence in these data, governments, institutions and policy makers cannot have confidence that the science on which public policy is based is correct. We cannot trust model output if data put into the model is questionable.

The International Climate Data Registry Act (or one very similar) would help provide the necessary trust in climate data, an amendment to which would establish an International Climate Data Registry. This Registry would provide certified climate proxy data that could be stored on a National Institute Standards and Technology (NIST) web page, which would allow the scientific and policy community to better evaluate climate model results and provide more confidence in scientific results.

The Very Basics

Data quality — accuracy, validity, reliability, completeness, structure, consistency, timeliness — is essential for identifying and defining a condition or a problem. The U.S. Department of Education recognizes the importance of data quality and defined standards. The Secretary of Education is now taking steps to ensure that all states use the same formula to calculate student graduation rates. Secretary Spellings explained the need for "precise definition of 'graduation rate'" to evaluate effectiveness of school systems. This agency at least recognizes the need to establish the facts before acting. Should we not expect the best possible quality of data when evaluating climate change to establish facts before we implement the extensive and expensive remedial actions being proposed?

Industry stepped forward to assure valid data and standards in the early 20th century. Boiler explosions were the scourge of American life from the mid-19th century through the early 20th. Some 50,000 Americans died every year in these accidents. Absent national standards for boiler construction, each state and municipality was on its own. So were manufacturers, who had to try to please all jurisdictions that had codes (many did not), an impossible task which imposed a great economic hardship. There were neither common standards nor a repository of information (technical data) about boilers and their operation so that the actual conditions and controls for boiler construction, operation, inspection and safety (remediation of the problem) could be addressed in a reasoned way.

Public outcry over needless deaths, and the need for reliable data by insurance companies and banks for risk mitigation drove industry to create standards to lessen the risk of loss of both life and investment. This recognition of the need for common data standards to avoid

duplication, waste and conflict, and to provide accreditation of data codes, led to the formation of the American Institute of Electrical Engineers (now the IEEE), the American Society of Mechanical Engineers (ASME), American Society of Civil Engineers (ASCE), American Institute of Mining and Metallurgical Engineers (AIMME) and the American Society for Testing Materials (ASTM). They joined in 1919 to establish the American Engineering Standards Committee (AESC) to coordinate standards development, approve national consensus standards and provide a recognized source for valid scientific data.

Over the years, the AESC accepted more professional societies — and their data dictionaries — into the organization and in 1969 it became the American National Standards Institute (ANSI). ANSI's stated purpose is:

> "To enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity."

Application of consensus standards is a start for linking private and public stakeholders together to get the data right on climate science.

Current United States Laws on Data Quality and Climate Policy

In 1996, the National Technology Transfer and Advancement Act (Public Law 104-113) was signed into law. Its most significant provision is that all federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments. This law provided the bridge between standard developers and government agencies in a growing trend to facilitate the use of voluntary consensus standards.

The little-known Data Quality Act (DQA) was passed by Congress in 2000 (Section 515 of the Treasury and General Government Appropriations Act of 2001 [PL 106-544, H.R. 5658]). The DQA was a start toward assuring that valid data is used for Federal policy. Pertinent to this paper, the DQA required each federal agency to independently establish standards to evaluate the quality of the data it used to justify a new regulation. But the DQA left two big holes in the process to establish data quality: its application is not mandatory and it does not require peer review of data.

In 2007 the importance of valid data for climate modeling to guide greenhouse reduction technologies was recognized by Senator Craig. That led to his attempt to amend the Energy Policy Act of 1992 to provide for the establishment of an international climate data registry (see the appendix).

The Peer Review Process

Peer review is a long-established practice in the publication process for "scholarly" scientific journals. Most peer-reviewed journals are dense collections of information with no advertisements, whose intended reading audiences are generally fellow scientists within the same discipline. Peer review separates scholarly journals from other published materials, such as newspapers, magazines, books and government deliberations published in the Congressional Record. The peer review process is generalized across the range of journals. A journal recruits volunteer peer reviewers. These peer reviewers, (or assistant/associate editors) are listed and thanked by the journal, for without such volunteers the process would not exist. In a small field these reviewers are often known by the editor, and vice versa; hence peer review. The author is not informed which peers are reviewing the paper, so that the review can be conducted without fear of reprisal from the author(s). Peer review is presumed to assure that the information is valid, but it does not. As generally exercised today, peer review assures format and composition, not necessarily scientific validity.

For most journals, the publication process works like this:

- An author (or authors for a large research project) writes up his or her scientific

results in the journal's required format, then certifies that the paper is original and has not published elsewhere.

- The journal editor (or editorial board) scans the submitted paper and selects three volunteer peer reviewers who are provided the title, abstract and the name of the author(s) and asked if they can review the paper. If the answer is 'yes,' the full publication is sent. Reviewer's identities are not revealed to others, thus preserving "independence" of review, though in many fields the number of qualified potential reviewers is small and most are likely to be known to the author(s.)
- The reviewer receives the submitted paper and the journal's review form that directs basic questions for the review:
  - Is the topic relevant to the journal's purpose and relevant to the intended reading audience?
  - Does the paper provide define a new technology or information and/or does it evaluate previously published facts in a new way?
  - Is the technical information sufficiently detailed and logically presented in the prescribed format so that the reader can understand and evaluate the assumptions and reasoning, and is the information valid and applicable to the topic?
  - Is plagiarism or commercialism evident and has the paper been previously published?
- The reviewer then assigns a grade and returns the paper, with any comments, to the journal editor.

If a grade lower than a 'B' is assigned, the journal editor usually returns the graded paper to the author to change it to the satisfaction of the reviewer(s) and the editor. The editor then makes the judgment as to who is right, the author or the reviewer(s), and makes the final determination concerning publication, since papers in that journal must be of high quality for the journal to sell subscriptions to libraries and scientists.

As both an author and a peer reviewer, I recognize some flaws in the process:

- Scientists are evaluated and compared based on the *number* of peer review publications submitted. This creates a 'rush to publish' mentality. Some scientists publish redundant information in different journals.
- Journals may encourage papers to keep their page count up, both so that they will be viewed as essential permanent records of scientific progress and so that they can sell subscriptions and pay their staff. Thus they may have an incentive to publish problematic papers.
- Reviewers are volunteers who read these papers on top of other responsibilities of their busy careers. Reviewers volunteer in order to keep abreast of scientific development, keep a watch on scientific competitors (since this is "secret" review), and gain prestigious acknowledgment of their support of the field by being cited as a reviewer.

The biggest hole in the process is the review itself. It is not an audit such as a CPA firm provides yearly to a company. The reviewer simply reads what is written by the author. The reviewer does not directly contact the author. The reviewer does not go into the author's laboratory to ensure that correct standards are used. The reviewer does not pour through thousands of lines of code to make sure the computer program does not contain some unsuspected bias. The reviewer does not normally have access to the original data, nor does he have the time for detailed review of that data. In short, the reviewer performs a very limited evaluation the submitted paper. The current scientific peer review process is not really a validation of results; it is simply an evaluation of what the author is choosing to share in the publication. It is by no means an audit of the data.

What does the public actually see? They see

a well-composed technical document, that has been subjected to only a cursory technical review and whose scientific content is not certified as valid. We need to insure that public policy makers have access to validated and audited scientific information and the scientific community has the obligation to assure the correct numbers — and the predictions — for policy bases.

Is Peer Review Enough?

Climate scientists and modelers maintain the academic position that peer review assures validity of assumptions and promotes accuracy of their work, begging the question "How well does the journal peer review process work?"

The process faces interesting challenges: it is performed by volunteers (most of whom are pursuing advancement within their chosen field), it is entrusted to professional colleagues, it is done confidentially, and the journal editor has the last say. This has been the traditional process for the publication of research and organization of knowledge. Unfortunately, it is an unsatisfactory process which can result in poor data presentation and flaccid reviews. Errors in data, research or methodology are part of the scientific process and become self-correcting but, when public funds, or human safety are involved, a better means to identify error is required — voluntary consensus standards.

A compelling example of the failure of peer-reviewed climate science is the "hockey stick." A well-publicized study characterized the earth's temperatures over the past one thousand years on a graph showing a relatively steady change abruptly ending in a steady linear increase in temperature. The graph was found to have been based on flaws in methodology and use of poor data. This erroneous graph was used widely in Intergovernmental Panel on Climate Change (IPCC) reports on climate change, and when its flaws were discovered, public trust in the IPCC was compromised.

The website www.climatedata.org offers examples of incorrect data recorded by NASA satellites, poor proxy data, and the inappropriate use of climate models to produce data. Additional climate data collection problems are documented in ***http://gallery.surfacestations.org/main.php***, which shows numerous NOAA U.S. Historical Climatology Network (USHCN) weather data stations are improperly located and are presenting data biased toward higher temperatures.

The point is, we must get the data right – and the best way is with a registry of valid accessible climate data that allows independent verification by scholars, the public, policy makers and the financial, engineering and manufacturing communities affected by national legislation.

Going Forward with Quality Data: the Responsible Approach

What is the International Climate Data Registry Act (in Appendix) trying to accomplish? It has two guiding purposes:

- to establish a climate data registry, and,
- to provide for the establishment of an international committee to certify the data.

Simply put, those who produce climate data, either by experiment or observation, should adopt a procedure and uniform format that provides an easy verification method allowing a high level of confidence in accuracy and verifiability of reports. In this way, entities that carry out climate research and modeling can use this certified data and have confidence in the results.

The proposed legislation has safeguards for climate policy makers requiring that methods, measuring and modeling techniques be fully disclosed and includes audit provisions, the same external validation required with other organizations. It spells out what a "certified independent party" is in order to prohibit such things as compensation by the certifying party. That seems obvious, but such requirements do not exist now.

The advantages of this type of legislation are that it:

- would require US funded climate research to document their data just like other

professions (e.g., financial and engineering) do now;

- would allow international data that meets the established requirements to be apart of the data set;
- would provide a consistent, certified locus of climate data so that future generation can understand how decisions are made today, and,
- would start producing more consistent predictions by using a consistent data set as input~~s~~ to climate models.

There is an incontrovertible need for high quality data for any endeavor that uses public funds and/or puts the public at risk. Climate data are no different – the voluntary consensus standard hallmarks of ANSI and establishment of a controlled international data registry can ensure a fair and logical process. Whether one is for or against the current climate legislation, both sides should agree that quality data standards support the path forward for the United States, and the world, to make sound climate policy.

Appendices

Senator Craig's International Climate Data Registry Act

Title: To amend the Energy Policy Act of 1992 to provide for the establishment of an international climate data registry.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "International Climate Data Registry Act".

SEC. 2. INTERNATIONAL CLIMATE DATA REGISTRY INITIATIVE.

Title XVI of the Energy Policy Act of 1992 (42 U.S.C. 13381 et seq.) is amended by adding at the end the following:

"SEC. 1610. INTERNATIONAL CLIMATE DATA REGISTRY INITIATIVE.

"(a) Purposes.—The purposes of this section are—

"(1) to establish a new international climate data registry—

"(A) to further encourage efforts by persons and entities conducting climate change research and modeling in the United States;

"(B) to encourage those persons and entities to submit climate data that is certified for public use;

"(C) to adopt a procedure and uniform format for use by persons and entities in establishing and reporting climate data and baselines in connection with, and furtherance of, climate change policy; and

"(D) to provide verification mechanisms to ensure, for participants and the public, a high level of confidence in accuracy and verifiability of reports, data, and climate proxies; and

"(2) to provide for the establishment of the International Standards Climate Committee to certify data in the international climate data registry.

"(b) Definitions.—In this section:

"(1) Committee.—The term 'Committee' means the International Standards Climate Committee established under subsection (d)(1)(A).

"(2) Entity.—The term 'entity' means—

"(A) a public person;

"(B) a Federal, State, interstate, or local governmental agency, department, or corporation;

["(C) an institution of higher education;]

"(D) a National Laboratory; or

"(E) any other publicly-owned organization.

"(3) Greenhouse gas.—The term 'greenhouse gas' means—

"(A) carbon dioxide;

"(B) methane;

"(C) nitrous oxide;

"(D) hydrofluorocarbons;

"(E) perfluorocarbons;

"(F) sulfur hexafluoride; and

"(G) any other gas that the Director of the Office of Science and Technology Policy, in consultation with the National Academy of Sciences, defines as a greenhouse gas for purposes of this section, based on credible scientific research.

"(4) Proxy data.—The term 'proxy data' means climate temperature data from tree rings, ice samples, sediment samples, fossil records, and [_____].

"(5) Registry.—The term 'registry' means the international climate data registry established under subsection (c)(1)(A).

"(6) Secretary.—The term 'Secretary' means the Secretary of Energy, acting through the Administrator of the Energy Information Administration.

"(c) International Climate Data Registry.—

"(1) Establishment.—

"(A) In general.—Not later than 1 year after the date of enactment of this section, the Secretary, in consultation with the Committee, shall establish an international climate data registry.

"(B) Administration.—The registry shall be administered by the Secretary in accordance with applicable provisions of—

"(i) this section; and

"(ii) the Department of Energy Organization Act (42 U.S.C. 7101 et seq.).

"(2) Designation.—On establishment of the registry under paragraph (1) and issuance of the guidelines in accordance with subsection (d)(2), the registry shall serve as the depository for the United States and any international entity [that elects to participate in the registry] for data on climate research that are collected from, and reported by, persons or entities that conduct or evaluate research in the United States or outside the United States.

"(3) Participation.—

"(A) In general.—Any person or entity conducting climate science research or other climate science activities may, in accordance with the guidelines issued under subsection (d)(2) and the conditions described in subparagraph (B), voluntarily report to the registry—

"(i) proxy data; and

"(ii) modeling results using certified proxy data.

"(B) Conditions.—The conditions described in this subparagraph are that—

"(i) with respect to a report described in [subparagraph (A)(i)], the report represents a complete and accurate inventory of—

"(I) [proxy data]; and

"(II) any domestic or international climate measurements [relating to the proxy data]; and

"(ii) with respect to a report described in [subparagraph (A)(ii)], the [proxy data and climate measurements] have been verified by the Committee—

"(I) in accordance with the guidelines issued under subsection (d)(2)(B)(ii); or

"(II) by other means determined to be appropriate by the Secretary.

"(4) Confidentiality of information.—Any trade secret information or commercial or financial information that is privileged and confidential shall not be submitted to the registry under paragraph (3).

"(d) Implementation.—

"(1) International standards climate committee.—

"(A) In general.—[As soon as practicable after the date of enactment of this section], the Secretary shall establish the International Standards Climate Committee to [assist in administering the registry, including certifying data in the registry].

["(B) Membership.—The Committee shall be composed of at least 6 members, including—]

["(i) the Secretary;]

["(ii) the Secretary of Commerce;]

["(iii) the Chairman of the Council on Environmental Quality;]

["(iv) the Secretary of Agriculture;]

["(v) the Administrator of the Environmental Protection Agency; and]

["(vi) the Secretary of Transportation.]

"(2) Guidelines.—

"(A) In general.—Not later than 1 year after the date of establishment of the registry under subsection (c)(1)(A), the Secretary, in consultation with the Committee, shall issue guidelines establishing procedures for the administration of the registry.

"(B) Contents.—The guidelines issued under subparagraph (A) shall include—

"(i) means and methods to determine whether climate science data is credible, taking into consideration the Committee certification;

"(ii) procedures for the verification by the Committee of climate science data—

"(I) in accordance with authority available to the Secretary under this section and other applicable provisions of law; and

"(II) by taking into consideration, to the maximum extent practicable—

"(aa) the source of the data;

"(bb) any errors in the measurement of the data;

"(cc) the procedures used to obtain the data; and

"(dd) other relevant factors;

"(iii)

(I) a range of reference data for reporting of climate science data; and

"(II) any benchmark and error and calculation methodologies and practices that may be used as reference data for eligible projects;

"(iv) safeguards—

"(I) to prevent and address climate science data reporting errors (including inadvertent reporting of data) through Committee review; and

"(II) to provide for corrections and adjustments in data, as necessary;

"(v) procedures and criteria for the review, approval, and registration of ownership or holding of all or any portion of reported, independently-verified climate science data;

"(vi) requirements that any climate science measures, methods, and measuring and modeling techniques be fully disclosed, in accordance with procedures established by the Committee; and

"(vii) such audit provisions as are necessary to permit any change in data submitted to the registry.

"(3) Consideration.—In developing the guidelines under paragraph (2), the Secretary shall take into consideration—

"(A)(i) the guidelines for voluntary climate science data submission;

"(ii) the experience of the Secretary in applying those guidelines; and

"(iii) any revision to those guidelines initiated by the Secretary in response to changing climate science analysis policy or research techniques;

"(B) protocols and guidelines developed under any Federal or State voluntary [climate science data reporting] program; and

"(C) the guidelines established under section 515 of the Treasury and General Government Appropriations Act, 2001 (commonly known as the 'Data Quality Act') (44 U.S.C. 3516 note; 114 Stat. 2763A–1543), as enacted into law by section 1(a)(3) of Public Law 106–554.

"(4) Experts and consultants.—

"(A) In general.—In accordance with section 3109 of title 5, United States Code, the Secretary and any member of the Committee may secure the services of 1 or more experts or consultants in the private and nonprofit sectors in the areas of greenhouse gas measurement, certification, and emission trading.

"(B) Grants, contracts, and agreements.—In securing a service under subparagraph (A), the Secretary or the member of the Committee securing the service may use any grant, contract, cooperative agreement, or other arrangement authorized by applicable law and available to the Secretary or the member of the Committee.

"(5) Public comment.—The Secretary shall—

"(A) make the guidelines issued under paragraph (2) available in draft form for public notice and opportunity for comment for a period of at least 90 days; and

"(B) after that 90-day period, adopt the guidelines for use in implementing this section.

"(6) Review and revision.—The Secretary, through the Committee, shall periodically review and, as necessary, revise, in accordance with paragraph (5), the guidelines issued under paragraph (2).

"(e) Voluntary Agreements.—

"(1) In general.—Any person or entity may voluntarily enter into an agreement with the Secretary [to provide for the annual reporting to the registry of the greenhouse gas emissions of the person or entity.]

"(2) Public notice and comment.—

"(A) In general.—Not later than 30 days before the date on which an agreement described in paragraph (1) is finalized, the Secretary shall—

"(i) publish in the Federal Register a notice of finalization for the agreement; and

"(ii) provide an opportunity for written public comment.

"(B) Comments.—The Secretary—

"(i) shall review each comment received under subparagraph (A)(ii); and

"(ii) after reviewing the comments, may—

"(I) withdraw the agreement described in paragraph (1); or

"(II) agree with each person or entity that is a party to the agreement to—

"(aa) revise and finalize the agreement; or

"(bb) finalize the agreement without substantive change.

"(f) Measurement and Verification.—

"(1) In general.—The Secretary of Commerce, acting through the Director of the National Institute of Standards and Technology and in consultation with the Secretary, shall develop standards and best practices for accurate measurement and verification of greenhouse gas emissions and emissions reductions.

"(2) Components.—The standards and best practices developed under paragraph (1) shall address the need for—

"(A) standardized measurement and verification practices for reports made by all persons and entities participating in the registry, taking into account—

"(i) protocols and standards already in use by persons or entities desiring to participate in the registry;

"(ii) boundary issues, such as leakage and shifted use;

"(iii) avoidance of duplicative counting and reporting of greenhouse gas emissions and emission reductions; and

"(iv) such other factors as the Secretary of Commerce and the Secretary determine to be appropriate; and

"(B) measurement and verification of actions taken to reduce, avoid, or sequester greenhouse gas emissions.

"(g) Certified Independent Third Parties.—The

Secretary and the Secretary of Commerce, acting through the Director of the National Institute of Standards, shall develop standards for certification of parties to verify the accuracy and reliability of reports submitted under this section, including standards that—

"(1) prohibit a certified party from participating in the registry through the ownership or transaction of transferable credits recorded in the registry;

"(2) prohibit the receipt by a certified party of compensation in the form of a commission received by the certified party based on the quantity of emission reductions verified by the certified party; and

"(3) authorize certified parties to enter into agreements with persons engaged in trading of transferable credits recorded in the registry.

"(h) Report to Congress.—

"(1) In general.—Not later than 1 year after the date of issuance of guidelines under subsection (d)(2), and biennially thereafter, the President, acting through the Committee, shall submit to Congress a report on the status of the registry.

"(2) Contents.—The report shall contain an assessment, expressed in terms of geographic locations and national emissions represented, of the level of participation in the registry.

"(i) Termination of Authority.—The authority provided by this section terminates effective December 31, 2010.".

Data Quality Act, included in the Treasury and General Government Appropriations Act of 2001: Sec. 515.

(a) In General.—The Director of the Office of Management and Budget shall, by not later than September 30,2001, and with public and Federal agency involvement, issue guidelines under sections 3504(d)(1) and 3516 of title 44, United States Code, that provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies in fulfillment of the purposes and provisions of chapter 35 of title 44, United States Code, commonly referred to as the Paperwork Reduction Act.

(b) Content of Guidelines.—The guidelines under subsection (a) shall—

(1) apply to the sharing by Federal agencies of, and access to, information disseminated by Federal agencies; and

(2) require that each Federal agency to which the guidelines apply—

(A) Issue guidelines ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by the agency, by not later than 1 year after the date of issuance of the guidelines under subsection (a);

(B) establish administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency that does not comply with the guidelines issued under subsection (a); and

(C) report periodically to the Director—

(i) the number and nature of complaints received by the agency regarding the accuracy of information disseminated by the agency; and

(ii) how such complaints were handled by the agency.

The full Act is at ***http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=106_cong_public_laws&docid=f:publ554.106***