

What is e-Bench™

Overview of e-Bench

Developed from concept by Energy and Technical Services of New Zealand and represented by Energy ResolutioNZ, Inc. in North America, e-Bench™ is a full energy and utility software management system. Internet based, e-Bench™ models an organization's core business (buildings and processes) and allows users to determine for themselves how efficiently they are consuming energy and utilities and how this relates to their core activities. It provides all features that could be expected from an energy and utility management system including invoice reconciliation, targeting & monitoring, benchmarking and identifying best practice.

Range of Functions

e-Bench has been designed as a one-stop shop to meet the needs of the energy/utility manager, facilities manager, process engineer but at the same time, interpreting many of its reports does not require technical expertise, and it can be an equally valuable tool for the building owner, tenant or a chief financial officer. Hence, to meet the requirements of this diverse group of users, e-Bench provides a very wide range of output and interpretive data that addresses both technical and non-technical issues.

Data/Information Inputs and Outputs

e-Bench is a comprehensive management system that is a hybrid between an audit and a simulation/modeling tool. In providing this, e-Bench requires inputs of operational data such as energy and utility consumption patterns, utilization data such as hours of use, number of occupants, climate data such as heating degree days, cooling degree days, hours of sunlight, physical factors such as the nature of construction, type of materials, etc. At the heart of this is a simulation/modeling tool that interprets all of these inputs, relating them to the facility or process being modeled. It also provides outputs that readily and transparently benchmark how well it is performing for an in-depth description of the types of data and information managed by e-Bench, how it is collected and incorporated into Datasets.

FAQ - Frequently Asked Questions for e-Bench™

1. General

1.1. What does e-Bench do?

e-Bench is a full energy and utility software management system. Internet based, e-Bench models an organization's core business (buildings and processes) and allows users to determine for themselves how efficiently they are consuming energy and utilities and how this relates to their core activities. It provides all features that could be expected from an energy and utility management system including invoice reconciliation, targeting & monitoring, benchmarking and identifying best practice.

1.2. Who developed e-Bench?

e-Bench has been developed from concept by Energy and Technical Services Ltd who are based in Wellington, New Zealand. It is represented and support by Energy ResolutioNZ, Inc. in North America.

1.3. What database does e-Bench use?

e-Bench runs on a Sybase database engine. This is a very robust, reliable and proven database engine.

1.4. Who owns the data in e-Bench?

The ownership of a client's data always rests with the client. We are aware of other systems and services which are provided that claim ownership of this data, something we find commercially immoral and were keen to avoid. We do however require acceptance from clients that we are free to use their data as part of the e-Bench database sample, providing confidentiality is maintained.

1.5. Do I need to worry about updating e-Bench?

No. All the data and software required to operate e-Bench sits on the e-Bench application server. All you need to do is log on to access your data. There will, however, be times when Energy and Technical Services will need to take the server briefly out of service for upgrades but you will receive timely advance warning of this.

1.6. How often do new releases occur?

These will occur on a regular basis as we continue to add new features. In fact we encourage all users to suggest features they would like to see and where possible, we will incorporate these into our development program.

1.7. How secure is my data and can anyone else access it?

Your data is as secure as we can make it. We take security of our system very seriously and it is something that is constantly under review. Unless specifically authorized by you, no one else can view or have access to your data.

1.8. What programming language does e-Bench use?

A combination of Java and html.

1.9. Can I set up e-Bench so that some users have read only access?

Yes. This level of access is known as "Observer" and will allow access to all of the specific user's information in e-Bench but will not allow them to make any changes to this information. There are two other levels of access – "General User", who has full access to all information and, "Primary Contact" with the same full access and who can also add or delete users.

1.10. What benchmark figures does e-Bench use for its comparisons and where do they come from?

The benchmark figures are drawn from the organizations using e-Bench. This means that instead of using some theoretical figures, the benchmarks are based on actual processes or buildings. By adopting this approach we are mirroring what is really happening in the market. Hence we expect to see continually improving benchmark indicators as new technology, materials and practice are steadily introduced over time.

2 What e-Bench can and cannot achieve

2.1 Can I use e-Bench to verify that my retailers are charging me correctly without entering any of the physical (attribute) information required for benchmarking?

Yes. While the most powerful features of e-Bench focus on benchmarking and highlighting where efficiency measures should be implemented, there is no requirement for an organization to enter the physical attribute data relating to a building or process if your only need is to check that bills are correct. Of course, this in no way limits a user from subsequently entering the attribute data required for benchmarking. In fact we encourage users to adopt a multi-stage process in implementing e-Bench, with

Stage 1) being the population of all meter details

Stage 2) being the entry of consumption data

Stage 3) being a decision about what entities are to be benchmarked

Stage 4) the collection and entry into e-Bench of this utilization and construction attribute data

2.2 Does e-Bench allow monitoring and targeting?

Yes. Monitoring and targeting can be achieved independent of benchmarking. By completing Stages 1) and 2), (as described in the answer to the immediately previous question 2.1) a user will be able to use e-Bench for monitoring and targeting. As with invoice verification, this in no way limits a user from subsequently entering the utilization and construction attribute data required for benchmarking.

2.3 Can I benchmark my organization internally?

Yes. You will be able to benchmark your organization internally and also externally against other like processes or facilities in the database.

2.4 Is there a limit to the number of sites or meters I can have in e-Bench?

No. The number of sites or meters is only limited by the number the user actually has.

2.5 Is there a limit to the number of entities I can create or benchmark?

No. Users are able to create as many benchmarking entities as they wish. However as each entity has to have its own consumption and attribute data, there is likely to be a limit on the number of entities and the amount of useful information commensurate with the effort involved in their creation and ongoing administration.

2.6 What guidelines for space management does e-Bench follow?

In the absence of other known or established protocols e-Bench has adopted the guidelines for allocation of space management in accordance with the Tertiary Education Facilities Management Association (TEFMA). We differentiate between landlord or common areas, tenant or departmental areas, engineering areas, internal car park areas and also areas that may be empty due to refurbishment or being temporarily vacant.

2.7 Can you use e-Bench to estimate energy savings?

Yes. e-Bench will give an estimate of what can be achieved in energy efficiency improvements for an entity before any money is spent on energy audits or remedial works. It can also be used to subsequently verify how successful any energy efficiency measures have been.

2.8 Can I use e-Bench to evaluate changes to my buildings or processes?

Yes. You can change the characteristics of your building (for example such as adding insulation or changing the type of window glazing) or process (such as increasing the size of your evaporator or pipe-work sizes) and, on request, we can enable e-Bench to run a simulation of your building or process with these characteristics in the model. This will allow you to determine the payback of such measures and whether they are viable.

2.9 Is there a limit or restraint on the types of energy or utility I can enter?

No. e-Bench can accept all types of energy and utility data which includes water, steam, chilled water, hot water, electricity, reticulated gas, LPG, medical gases, coal, biomass, solar, photovoltaic's, diesel, gasoline, fuel oil, etc.

2.10 How often does e-Bench do its benchmarking calculations?

Daily.

3. Clients

3.1 What sort of organizations can use e-Bench?

e-Bench is suitable for use by every organization that wants to manage energy and utilities as effectively as possible. e-Bench employs a high level of simulation and data interpretation, which means its outputs and reports have been made as simple as possible to be understood. Unlike some other systems and tools available in the market, e-Bench is intended for the end-user or mass market, rather than for those necessarily having access to a high level of technical expertise such as a consultancy or an energy supply company.

3.2 What size of organization is best suited to e-Bench?

Any organization spending more than \$50,000 annually on energy and utilities would certainly benefit from using e-Bench. As the fees for subscribing to e-Bench are proportional to the actual spend on energy and utilities, it is fair to both small and large organizations.

3.3 What if I want to use e-Bench and you don't have a model to suit my industry?

It is our intention to build a model for each industry or market sector. We may have to develop these models according to a user's requirements and market demand will determine priorities. Please feel free to contact us to see if we have a model for your industry or market sector and if we don't, when we are likely to have one available. You can of course still use e-Bench for monitoring and targeting as well as to track and verify whether your invoices are accurate.

3.4 How can e-Bench support international clients?

e-Bench is totally based in the Internet and therefore we can service and support clients anywhere there is reasonable Internet access. In support of this, we have access to adequate climate and weather data to allow meaningful international benchmarking to be undertaken. Furthermore we are also presently in negotiations with a multi-national organization about being able to establish a physical presence in many international markets.

4. Competitors

4.1 Who are the main competitors for e-Bench?

We know of a few competing products that can undertake several of the functions available in e-Bench, but they tend to be audit and verification tools. Some examples are: EnergyPro, Metrix, etc., or simulation tools such as EnergyPlus or MarketManager (both of which undertake a more comprehensive simulation than e-Bench). Most of these systems seem to be aimed at the energy consultant or energy supply company rather than the end-user as is the case for e-Bench. There are also some Internet based systems such as Miniscus or ENTERPRISE.EM that at first appearances may also seem to resemble e-Bench. But to the best of our knowledge there is no other Internet based single package that is an audit /verification and simulation tool offering the same functionality and range of applications as e-Bench and which is both easy to use and interpret. We would be delighted to learn of other systems and tools that could challenge this assumption.

4.2 What are the advantages of e-Bench over these competitors?

e-Bench is a single Internet based audit /verification and simulation tool offering all that could be required from an energy and utility management system. We are unaware of any other tool or system that offers the same ease of use or range of functionality as does e-Bench. It is priced extremely competitively (in most cases less than 1% of the organization's spend on energy or utilities). Furthermore, it comes with a guarantee that, subject to adequate endeavors to use e-Bench, if a user fails to make savings equal to the value of the subscription, ERNZ will refund the fee in full. We hope that you will learn more about e-Bench for yourself from this site and, if you have any comments or feedback, that you will also share these with us.

4.3 Has any intellectual property applications for e-Bench been taken out?

Yes. Energy and Technical Services has filed for international PCT applications in support of the method of evaluation and our audit / verification and simulation process.

5. Data export and import

5.1 What level of information do I have to enter into e-Bench to get it working for me?

For e-Bench to start providing basic meaningful outputs you only require meter and consumption data to be entered. This will allow you to be able to verify and reconcile invoices plus monitoring and targeting. We actually encourage users to adopt a multi-stage process in implementing e-Bench, with Stage 1) being the population of all meter details, Stage 2) being the entry of consumption data, Stage 3) being a decision about what entities are to be benchmarked and Stage 4) the collection and entry into e-Bench of this utilization and construction attribute data.

5.2 How does my consumption data get into e-Bench?

Consumption data can be entered into e-Bench by a variety of different means. If the data in question is a Time of Use (TOU) electricity connection, this can often be available electronically from your retailer or your meter provider. If this is the case e-Bench can accept this as XML or CSV format file attachments. We are presently working with all retailers to obtain consumption data electronically to thereby avoid the manual entry of any consumption data. However if this data is not available electronically, consumption can be entered directly into e-Bench by the user, or, if there are a large number of meters, the data can be entered into a spreadsheet, which can then be sent through electronically to e-Bench.

5.3 Can I get ERNZ to provide me with a data entry service?

Yes. If your organization receives a large number of invoices and wants this data entered into e-Bench, we can provide this as a separately charged service for you. It is envisaged that this data entry service will only be required until the stage when all retailers can provide consumption data electronically.

We strongly recommend large organizations take up this offer if time or resource constraints are an issue.

5.4 Can I import asset or maintenance register information into e-Bench?

Yes. e-Bench has been designed to import and export data in virtually any format. We are also presently developing an extension to e-Bench that will allow us to accept asset information directly into e-Bench with the intention of seamlessly integrating energy and utility management with maintenance. In so doing, e-Bench will also be able to conduct desktop Level Two energy audits. We expect this additional service to be available in the near future.

5.5 Can I export data out of e-Bench?

Yes.

5.6 What formats of data exchange does e-Bench support?

e-Bench supports all formats and others can be added as and when they are identified. Common formats include CSV, Text files, XML.

6. Reports

6.1 Can you customize reports in e-Bench?

Yes. While there are already a large number of report formats available, we recognize there will be an ongoing need to continue to develop and provide reports in new formats. To this end we have developed e-Bench to be capable of producing reports in any guise, i.e. they are totally customizable.

6.2 Who pays for customizing these reports?

The customization of reports is included within the annual subscription fee. ERNZ will customize reports for any user on the understanding that once produced, it will be available for use by all e-Bench subscribers.

6.3 Can e-Bench work with reports in Excel or Access?

Yes. It can work with all Microsoft packages as well as most other software systems.

6.4 Does it generate exception reports?

Yes.

6.5 On what basis does it generate an exception report and who will it go to?

e-Bench will automatically generate an exception report if the invoice tariffs are different from those expected. Furthermore, if consumption varies by more than a user defined percentage, then an exception report is also generated. A different variation percentage can be set for comparison with the immediately previous billing period as distinct from the same billing period in the previous year. If an exception is generated, e-Bench will send an email alert to whichever address the user has entered, advising the nature of the problem and details of the exception. It is also possible for a user to opt for a two-tier email alert, whereby if the problem

continues to recur, indicating a possible lack of attention, an alerting email will then be sent to another nominated address.

7. Invoice Data

7.1 Does it handle Time of Use (TOU) and Non TOU invoices?

Yes.

7.2 Can e-Bench handle estimated and actual readings?

Yes. It clearly differentiates between what is an estimated and what is an actual meter reading.

7.3 How does this get entered into e-Bench?

Consumption data can be entered into e-Bench by a variety of different means. If the data in question is a Time of Use (TOU) electricity connection, this can often be available electronically from your retailer or your meter provider. If this is the case e-Bench can accept this as a CSV format attachment. We are presently working with all retailers to obtain consumption data electronically to thereby avoid the manual entry of any consumption data. However if this data is not available electronically, consumption can be entered directly into e-Bench by a user logging into e-Bench and populating the appropriate fields or, if there is a large number of meters, the data can be entered into a spreadsheet, which can then be sent through electronically to e-Bench.

7.4 Can data be entered electronically by my retailers?

Yes. As mentioned in the question immediately above we are presently working with all retailers to obtain consumption data electronically to thereby avoid the manual entry of any consumption data.

8. Climate or Weather data

8.1 Where does the climate and weather data come from?

In New Zealand we obtain all our climate and weather data from the National Institute of Water and Atmospheric Research (NIWA). We also have access to additional average weather and climate data from another Internet based source. If international daily weather and climate data is required for benchmarking purposes we will seek this from the relevant local meteorological bodies.

8.2 What climate and weather data does e-Bench use?

e-Bench uses daily (real rather than average) sunlight hours, heating degree days, cooling degree days, wind speed, maximum gust, humidity, solar radiation, highest temperature and coolest temperature.

8.3 How does the climate and weather data get into e-Bench?

This information is entered electronically into e-Bench. There is no need for users to source and enter any of this data and the costs associated with its provision are included in the subscription fee.

9. Skills required for running e-Bench

9.1 How much technical expertise do I require to manage e-Bench?

There are no really technical skills required to enter data into e-Bench and it can be mainly undertaken by clerical staff. Interpreting the results also does not require any high degree of technical skills although understanding causes of inefficiency and devising acceptable solutions will require input from someone who has a reasonable technical background such as a building services engineer or an energy management consultant.

9.2 Is e-Bench straight forward enough for clerical staff to interpret it?

A clerical staff member can enter most information and also recognize how well the organization is performing in terms of efficiency by accessing the reports which will also identify where cost savings opportunities may lie. However, understanding causes of inefficiency and devising acceptable solutions will require input from someone who has a reasonable technical background such as a building services engineer or an energy management consultant.

10. Normalization Processes

10.1 What does e-Bench normalize or correct for?

e-Bench normalizes or corrects for everything that a process or production manager or a facilities manager cannot control or improve. Some of the factors for which e-Bench uses to normalize are:

- 1) Climate or weather;
- 2) Hours of use or number of occupants, i.e. factors that are part of providing the core function;
- 3) Geography and altitude;
- 4) Aspects of physical construction that can't be changed.

10.2 Can I view my data before and after normalization?

Yes. e-Bench actually produces three sets of outputs. The first one is benchmarking without any normalization, for example if the organization is a widget maker, the total energy consumed divided by the number of widgets produced. The second is benchmarking normalized for geography, utilization, climate and construction. The third is normalized for geography, utilization, climate, construction and equipment associated with the core business functions. This allows us to readily identify where the inefficiencies are, for example if we are benchmarking a building, we can tell if inefficiencies are due to poor construction, engineering services (heating, lighting) or the equipment being used to undertake its core function - e.g. an office.

11. Baseline Modifications

11.1 How does e-Bench handle changes in building or process information?

e-Bench has been developed to be a dynamic audit and simulation tool. As such, it can accept all types of baseline modifications in buildings or processes from their square footage (if space is added or lost), construction (if major permanent structural changes are made), utilization (hours of use, length and size of pipe-work if a water process, number of occupants or equipment being used for the core business activities). Modifications to engineering services such as chillers or light fittings, control systems or more minor construction attributes such as insulation or types of window glazing, are not considered baseline, as improvements to these are within the ability of the user to manage. The results of such improvements will then be quantified in reports showing a more efficient building or process.

11.2 How do I make these changes and how easy is it?

Changes can be made by logging on to e-Bench and changing the relevant baseline information in the appropriate utilization or construction fields. This is a very straight-forward process and does not require any specialized technical skills, providing the information is to hand. However it is likely that changes to baseline information will be the result of acquiring new facilities or production systems such as increased capacity. Is highly likely that the user will have access to technical expertise as a result of these changes. Indeed, we would recommend that updating or modifying the baseline information should be considered as part of the project at handover stage.

12. Subscribing to e-Bench

12.1 How much does e-Bench cost?

e-Bench has been priced competitively in US\$ to offer extremely good value for money. Based on a percentage of utility costs being managed plus initial setup cost.

12.2 How many PC's can I use to access e-Bench?

There is no limit to the number of PC's, work stations or users an organization may authorize to access e-Bench.

12.3 Can I get an obligation free proposal if I wanted to consider subscribing to e-Bench?

Yes. To request a proposal, click on Contacts and make a request via the contact form.

12.4 What are the terms of payment?

Terms of payment can be either monthly, quarterly or annually in advance. Please note quarterly payments are 5% higher than annual payments. However if you set up a monthly direct debit for the annual subscription a 2% reduction will apply.

13. Technical and Customer Support

13.1 What technical or customer support is available?

We have dedicated a full time technical and customer support team to answer any queries or manage any problems a user may be encountering. We may be reached by email on support@energyts.com, telephone on 704.907.8053 or by facsimile on 704.375.8423 during office hours 8.30am to 5.00pm (EST time). In addition we have an account management structure to assist you to obtain best value from our services.

13.2 What hours is this support provided over?

Support is available Monday to Friday, 8.30am to 6.00pm (EST time) and if there is an emergency outside those hours, please contact 704.907.8053 email support@energyresolutionz.com .

13.3 What is the normal time I should expect to wait before I am contacted regarding a problem or enquiry?

We will seek to respond to all enquiries promptly on the day of the request if made during Monday to Friday, 8.30am to 6.00pm (EST time) or by the next working day if the request comes outside of this period.

How it Works

e-Bench™ is an Internet enabled audit and simulation / modeling tool that is used to record systematically whatever energy or utilities an organization is consuming and to relate these to the core business activity. The system then benchmarks these input factors to identify how efficiently they are being used compared with all other like users on the whole database.

At the heart of e-Bench™ is a model simulating the core business activities of the organization using it. For example, if it is a waste water process, it will be a model of the various stages of treatment, processing and discharge. If a building, it will be a model of the physical structure, i.e. what the roof, walls and floors comprise, size of floor areas, etc.

After the appropriate model is selected and parameters established (such as size of physical plant or operations), then further climate, utilization, consumption and core business activity data is deployed in e-Bench. e-Bench is then able to interrelate these various inputs to each other in accordance with the rules, formulas and routines set out in the model. After various calculations, e-Bench produces a series of indicators customized to the organization's core business, which are in turn benchmarked against other like users to determine a relative efficiency and ranking.

Capturing all of these variables allows e-Bench™ to truly compare "apples with apples" and provide realistic and meaningful outputs never readily available before. Furthermore, e-Bench effectively corrects or normalizes for virtually everything that an organization or its energy/plant/process manager cannot control, such as the climate, orientation and exposure of buildings, humidity, geography, altitude, physical constraints of the building construction (type of materials, size, amount of glazing etc), occupancy, intensity of use, items processed and other factors.

Typical Clients

e-Bench™ is suitable for use by any organization that seeks to manage energy and utilities as effectively as possible.

e-Bench™ has staged functionality so that a user may use it just to check and verify invoices without also having to enter any additional data entailed in the benchmarking process. It also allows the user to be selective rather than being prescriptive about which entities are to be benchmarked.

Existing clients include a number from the following market sectors:

- Central Government
- Tertiary and Higher Education
- Primary and Secondary Schools
- Research Institutes
- Mining Companies
- Consultancies
- Manufacturing Industries
- Water Supply and Wastewater Industries
- Local Authorities
- Investment Property Companies
- Hospitals and Healthcare Providers
- Process Industries

Data Sets

The following data sets are used by e-Bench™. We describe below what these sets are and how the information may be collected and entered:

Organization and User Information

This is information relating to the organization itself, such as the physical and postal address and details about which users have access to e-Bench™ and their privilege (level of authorization – which will be either "Primary Contact", "General User" or "Observer"). It is envisaged that this information would normally be entered by the organization's Primary Contact.

Another important component is the sub-divisional record of the organization through a hierarchy of levels working down through Site(s) and Facility(ies), to Entit(y)ies. Sites have to be in the same geographical region, Facilities may comprise one or more buildings whereas Entities may be a single building or plant, or even smaller areas distinguished by common management or usage. Standard reports are available for each level of aggregation, with the smallest one, the Entity, being the basic level at which the most useful benchmarking reports can be obtained. To facilitate this, Entities require to be allocated with their own Purpose thereby enabling like to be compared with like when benchmarking efficiency across the whole data base.

Weather and Climate Data

Weather and climate cannot be influenced by the user but it can nevertheless have a profound impact on consumption of energy or utilities. This data is provided by Department of Energy (DOE) for different regions and consists of (real rather than average) sunlight hours, heating degree days, cooling degree days, wind speed, maximum gust, humidity, solar radiation, highest temperature and coolest temperature. All of this data is entered automatically into e-Bench™ and requires no action by the user except to identify the region for each Site.

Utility Source, Meter and Tariff Data

Every point of consumption will have its own unique identifier such as a meter number, Installation Control Point (ICP) or customer reference number. This information may be entered by the user or if preferred, Energy ResolutionNZ, Inc. can do this on behalf of the user as a separately charged service providing access to the necessary records is available.

Meter Consumption Data

Consumption data can be entered into e-Bench™ by a variety of different means. If the data is a Time of Use (TOU) electricity connection, this can often be available electronically from your retailer or meter provider when e-Bench™ can accept it in a CSV format. We are presently working with all retailers to obtain consumption data electronically to thereby avoid manual entry. However if this data is not available electronically, consumption can be entered directly into e-Bench™ by a user or, if there is a large number of meters, by entering it into a spreadsheet, which can then be sent through electronically to e-Bench™. As with the entering of Utility Source, Meter and Tariff Data, ERNZ can provide this as a separately charged service for you. It is envisaged that such a service would only be required until the stage when all retailers are willing and able to provide consumption data electronically. In order for ERNZ to be able to verify the accuracy of the information, we will be requesting hard copies of your energy invoices to be sent through to us.

Utilization or Input Data

Utilization data relates to some of the inputs required for your buildings or processes to perform their core function. Whilst there may be a wide range and diversity of inputs to consider, e-Bench™ is only concerned with those that can influence or impact on the energy efficiency of the process or building. These are inputs that will release or absorb thermal energy in a way that may have to be countered by the use of mechanical systems such as air-conditioning. Examples of these sources will include the number of occupants (on average around 100 watts per hour is released by each occupant) or details of equipment which releases heat during normal operation, such as a PC, cooker or refrigerator. Utilization data for a building or amenity is generally much more critical than it is for a process because the occupant's level of comfort will require temperatures to be maintained within a quite narrow range. On the other hand, many processes may tolerate wider temperature fluctuations without having any significant effect on their operation. However, process efficiency may require monitoring the embedded physical characteristics of the production materials, for example, in a forestry kiln drying operation, the moisture content of the raw timber will impact on the energy required to dry it.

As patterns of usage tend to vary from entity to entity, the hours of use, number of occupants and equipment deployment will commonly be unique for each. ERNZ can provide a spreadsheet template to facilitate the collection and entry of this data, as it is a task more suited to users due to their familiarity with the relevant business activities. Once collected the user can enter the data directly or email the completed spreadsheet to e-Bench™ for automatic entry. The user is free to modify these details at any time whenever relevant circumstances might change.

Despite the importance of utilization data, e-Bench™ can also accept the entry of additional input information unrelated to the energy or utility efficiency. We classify these non-energy or non-utilization input data as "Production Data" which is described immediately below.

Production Data – Optional Entry

Production Data can be described as Non-Utilization Data because it will not ordinarily be able to influence or impact on the energy efficiency of a process or building. e-Bench™ does not require the entry of any Production Data for it to report on the relative efficiency of the building or process, but from a user's perspective, having this information and being able to relate it to the overall process may be an extremely useful adjunct to e-Bench™. Examples of Production Data could be the: amount of water being pumped; miles a vehicle travels; stationery that is consumed; salary costs of employees; etc. There is no limit to the range of data that can be entered, although e-Bench™ may have to be customized to accept some types of data.

Construction Data

Construction data defines the physical characteristics of the building or process. As with Utilization Data, the relevance for a building or amenity is probably of greater significance than for a process, due to the importance of occupant's comfort levels and the ways in which the construction of the building fabric can affect this. Typical data that needs to be collected and entered will include: what the roof, walls and floors comprise, size of the floor areas, height between floors, etc.

Space Management Data

In the absence of other known or established protocols e-Bench™ has included the guidelines for allocation of space management in accordance with the Australasian body, the Tertiary Education Facilities Management Association (TEFMA), with some extensions of our own. Hence, each Entity (i.e. the subdivision level for the most effective benchmarking) has an allocated Class which defines it as being one of the following: landlord or common areas; tenant or departmental areas; engineering areas; internal car park areas; or areas that may be empty due to refurbishment or being temporarily vacant. Benchmarking comparisons are only made within the same Class and then they are further differentiated, if necessary, according to Purpose as described under Organization and User Data above.

Geography and Locational Data

When details of a Site are entered, a regional location has to be selected to correlate with the Weather and Climate Data. Geography can also be significant for activities such as water pumping in determining pressure heads.

Asset Data

An additional role for e-Bench™ arising from recording details of equipment and buildings is to act as a useful adjunct to the fixed asset register. Furthermore, e-Bench™ has been designed to be compatible with known Building

Management Systems (BMSs) and there is agreement in principle with several BMS providers to develop suitable interfacing which could be pursued on request.

There is an even more exciting development, for which Government research funding has been already approved in a program which commenced in February and due for completion shortly. This is to develop an Internet based system to conduct Level Two Energy Audits by integrating PC based asset and facilities management systems into e-Bench™.

Subscription

Annual subscription fees are based on a percentage of your annual energy/utility expenditure (starting from as low as 1.2% and exclusive of taxes) in accordance with our "e-Bench™ Service Agreement - Terms and Conditions for the Provision of Benchmarking & Database Services". There is a setup fee based on the data interface requirements and the number of facility/assets/meter setups required. Please note these fees are subject to review from time to time.

The e-Bench Guarantee

We are so confident in the ability of e-Bench™ to deliver tangible benefits to your organization that we will **guarantee** to credit the balance of your annual e-Bench™ subscription if savings do not exceed the costs of subscription – obviously assuming reasonable endeavors towards its proper and intended use have been followed.