

AUSTRALIAN BATTERY TRANSPARENCY STANDARD

DIGITAL PLATFORM, DIGITAL LABEL, MEMBERSHIP AND OEM INTEGRATION

Scope of Work for Web Designer and Web Developer

Project: ABTS Digital Battery Transparency Platform

Organisation: Australian Battery Transparency Standard

Website: australianbatterytransparencystandard.org

Initial Market: Australia

Future Markets: United States and other international jurisdictions

Document Purpose: Development Scope and Technical Requirements

1. PROJECT OBJECTIVE

The Australian Battery Transparency Standard requires a digital platform capable of creating, managing, verifying and publishing a standardised Battery Transparency Label for battery products sold, supplied or installed within the relevant market.

The proposed ABTS label is intended to contain both fixed ABTS information and product-specific technical information, including:

- Manufacturer
- Model
- Cell chemistry
- Country of manufacture
- Usable energy capacity
- Round-trip efficiency
- Operating temperature
- Warranty and service life
- Cycle lifetime
- State of Health projections
- Projected system replacements
- Levelised Cost of Storage
- Safety and hazard classification
- End-of-life stewardship information
- Unique ABTS identification number
- QR code linking to the digital battery record

The current proposed ABTS label specifically provides for these categories of information and a QR code providing access to supporting technical information.

The website developer is therefore being engaged to build the **digital infrastructure behind the physical ABTS label**, rather than simply designing a website page.

The platform must allow an authorised battery manufacturer, OEM, importer, distributor or ABTS affiliate to enter approved battery information and generate a production-ready digital label that can subsequently be printed directly by the battery manufacturer or its nominated label supplier.

2. CORE PLATFORM CONCEPT

The system should be built around the following architecture:

Battery Manufacturer / OEM

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ABTS Digital Platform

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Product Data Entry

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Technical Evidence / Documentation

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ABTS Review and Verification

↓

Unique ABTS Reference Number

↓

Digital ABTS Label

↓

Dynamic QR Code

↓

Public Digital Battery Record

↓

Physical Label Applied to Battery

The physical label therefore becomes the connection between the physical battery and its verified digital identity.

3. IMPORTANT DEVELOPMENT PRINCIPLE

The platform must not be designed as a simple static website.

It should be designed as a **database-driven digital certification and labelling platform**.

The label must be generated dynamically from the underlying battery product record.

This means the developer must build:

- A structured battery database
- User accounts
- Manufacturer accounts
- Affiliate accounts
- Product records
- Technical data fields
- Document management
- Verification workflows
- Unique ABTS references
- Dynamic QR codes
- Digital label generation
- Print-ready artwork generation
- Public verification pages
- Audit trails
- Version control
- Membership capability
- API capability

4. INITIAL AUSTRALIAN PLATFORM

The first implementation will be the Australian Battery Transparency Standard.

The system must therefore support Australian ABTS requirements, branding, terminology and data fields.

However, the database architecture must be designed from the outset so that ABTS can later establish additional national or regional standards.

For example:

Australia

ABTS-AU

Australian Battery Transparency Standard

United States

ABTS-US

United States Battery Transparency Standard

Future Markets

Potential future implementations may include:

- ABTS-Europe
- ABTS-Asia
- ABTS-Middle East
- ABTS-New Zealand
- Other national or regional frameworks

The developer must therefore avoid hard-coding the Australian standard into the core database architecture.

The system should use a **jurisdiction and standard framework** that allows additional standards to be added later.

5. FUTURE INTERNATIONAL EXPANSION

The international architecture should allow each jurisdiction to have its own:

- Standard name
- ABTS reference structure
- Label requirements
- Regulatory fields
- Technical requirements
- Certification requirements
- Currency
- Units
- Safety classifications
- Recycling requirements
- Supporting documentation
- Approval authority
- Membership structure

The core ABTS technology platform should remain common.

This creates the possibility of developing a global battery transparency platform while allowing individual jurisdictions to maintain their own standards and requirements.

6. AFFILIATE AND OEM PORTAL

Authorised manufacturers and affiliates should have a secure portal.

The portal should allow them to:

- Register their organisation
- Register authorised users
- Submit battery products
- Enter technical information
- Upload supporting documentation
- Submit products for ABTS review
- View approval status
- Correct information requested by ABTS
- Generate approved digital labels
- Download production-ready artwork
- Access their registered products
- View previous label versions
- Manage multiple battery models

7. OEM MANUFACTURER WORKFLOW

The system must be suitable for major overseas battery manufacturers and OEMs.

For example, a manufacturer such as GREE or another overseas battery supplier should be able to:

1. Create an OEM account.
2. Register its battery product.
3. Enter technical specifications.
4. Upload supporting test documentation.
5. Submit the product to ABTS.
6. Receive an ABTS Reference Number.
7. Complete ABTS verification.
8. Generate the approved digital label.
9. Download the production artwork package.
10. Supply the variable data to its production printing system.
11. Print the label directly onto or onto a label applied to the battery.
12. Apply the label to the battery before shipment to Australia.
13. Allow the end user to scan the QR code and verify the battery.

8. DIGITAL LABEL GENERATOR

The platform must include a dedicated:

"GENERATE ABTS LABEL"

function.

Once the product has been approved, the system should automatically generate the ABTS label using the approved product data.

The manufacturer should not manually recreate the label.

The platform should control:

- Label layout
- ABTS logo
- ABTS branding
- Mandatory wording
- Data fields
- Reference number
- QR code
- Certification status
- Label version
- Required disclaimers
- Print specifications

9. STATIC AND VARIABLE DATA

The label must be designed around two distinct data layers.

Static Layer

The static layer contains elements that remain consistent across ABTS labels.

Examples include:

- ABTS logo
- ABTS header
- Standard label title
- Table structure
- Field names
- Borders
- Icons
- Certification wording
- Standard colour palette
- Legal or regulatory wording

Variable Layer

The variable layer contains product-specific information.

Examples include:

- ABTS Reference Number
- Manufacturer
- Model
- Chemistry
- Capacity
- Cycle life
- Efficiency

- Temperature range
- Warranty
- State of Health
- LCOS
- Safety classification
- Recycling information
- QR code

This distinction is critical for OEM production environments.

10. PRODUCTION ARTWORK PACKAGE

The platform should ultimately be capable of producing a complete production-ready artwork package.

The manufacturer should not simply receive a screenshot of the label.

The system should support production artwork suitable for Variable Data Printing workflows.

The package should include, where applicable:

Master Vector Artwork

- AI
- EPS
- SVG
- PDF

The master artwork should use vector graphics and outlined fonts where required.

Static Layer

Containing:

- ABTS branding
- Logo
- Borders
- Fixed text
- Field headings
- Icons
- Design elements

Dynamic Layer

Containing:

- Product-specific information

- ABTS Reference Number
- Technical metrics
- QR code

11. VARIABLE DATA EXPORT

The platform should provide the ability to export the approved battery data in a structured format.

Required formats should include:

- CSV
- XLSX

The variable data file should map the ABTS Reference Number to the approved product information.

Example fields:

Field	Example
ABTS Reference	AU-987452
Manufacturer	GREE
Model	XXXX
Chemistry	LFP
Capacity	10.2 kWh
Cycle Life	6,000
Efficiency	95%
Operating Temperature	-10°C to +50°C
Warranty	10 Years
LCOS	\$X.XX/kWh
QR URL	ABTS digital verification URL

The actual fields should be configurable by ABTS.

12. QR CODE GENERATION

Every approved battery product must receive a unique QR code.

The QR code should link to the ABTS digital verification record.

The QR destination should be generated automatically by the platform.

The QR code should not contain a manually entered URL.

The platform should generate the relationship:

ABTS Reference Number → Digital Battery Record → QR Code

The QR code should remain permanently associated with that product record.

13. QR CODE VALIDATION

Before a label can be approved for production, the platform should validate that:

- The QR code is correctly generated.
- The URL is active.
- The ABTS Reference Number is valid.
- The digital record exists.
- The product is approved.
- The QR code points to the correct battery model.
- The QR code is unique.

The platform should provide a QR testing function before production release.

14. PRINT-READY LABEL OUTPUT

The manufacturer should be able to download the approved label in production-ready formats.

Required formats:

- PDF
- SVG
- PNG

The system should maintain the exact approved dimensions.

The PDF should preferably be vector based and suitable for commercial printing.

The manufacturer should not be able to modify mandatory ABTS information after the label has been approved.

15. LABEL MATERIAL AND DURABILITY SPECIFICATION

The website platform should store the approved ABTS label production specification.

The initial technical specification should support durable battery enclosure applications.

Potential specifications include:

Substrate

- High-durability polyester PET
- Polycarbonate
- Suitable industrial vinyl where approved

Adhesive

High-tack acrylic pressure-sensitive adhesive suitable for:

- Powder-coated steel
- Aluminium
- Painted metal
- Battery enclosure surfaces

Lamination

UV-resistant protective lamination suitable for:

- UV exposure
- Moisture
- Abrasion
- Cleaning chemicals
- Outdoor environments

Temperature

The label specification should accommodate the required operating environment for the battery application.

The exact material standards and compliance requirements should be reviewed and approved by the appropriate technical or certification authority before being represented as mandatory ABTS requirements.

16. OEM PRODUCTION METHODS

The platform should support information required for different OEM production approaches.

Option 1: Hybrid Digital Printing

The OEM receives pre-printed ABTS static artwork and applies variable information using:

- Thermal transfer
- Industrial digital printing
- Other approved VDP technology

Suitable for:

- High-volume manufacturing
- Multiple SKUs
- Changing reference numbers
- Multiple battery configurations

Option 2: Full On-Demand Digital Printing

The OEM prints the complete label using industrial digital printing.

Suitable for:

- Smaller production runs
- Multiple battery models
- Frequently changing specifications
- Batch-specific labels

The ABTS platform should not be dependent on a particular printing technology.

17. FIRST ARTICLE APPROVAL

The platform should include a workflow requiring a first production sample before mass production where required.

The manufacturer should be able to submit:

- Sample photograph
- Sample label
- Product information
- Printing method
- Label material
- Application method

ABTS should be able to approve or reject the first article.

The manufacturer should verify:

- Label dimensions
- Print quality
- Legibility
- QR scanning
- Adhesion
- Colour reproduction
- Correct technical information
- Correct ABTS Reference Number

18. ABTS ADMINISTRATOR APPROVAL

ABTS must retain ultimate control over the issuance of the ABTS label.

The manufacturer should not be able to independently declare a product ABTS certified.

The system should therefore use:

Draft → Submitted → Under Review → Changes Required → Approved → Label Issued

Only an approved product should receive the final ABTS certification status.

19. UNIQUE ABTS REFERENCE NUMBER

Every approved battery product must receive a unique ABTS Reference Number.

Example:

ABTS-AU-987452

The number should be:

- Automatically generated
- Unique
- Permanent
- Searchable
- Linked to the product
- Linked to the QR code
- Included on the digital record
- Included on the physical label

The system should maintain a complete historical record.

20. PUBLIC DIGITAL VERIFICATION PAGE

Scanning the QR code should open a mobile-friendly ABTS verification page.

The user should be able to immediately see:

ABTS VERIFIED

or the applicable certification status.

The page should display the approved product information.

It should also provide access to supporting information where permitted.

The current proposed label specifically contemplates QR access to NATA accredited test reports, degradation curves and Material Safety Data Sheets.

21. DOCUMENT MANAGEMENT

Each product should have a secure technical document repository.

Documents may include:

- Test reports
- Battery specifications
- Safety Data Sheets
- Material Safety Data Sheets

- Warranty documents
- Cycle testing
- Thermal testing
- Electrical testing
- Certification documents
- Factory documentation
- Recycling documentation

Each document should have:

- Document type
- Version
- Issue date
- Expiry date
- Issuing organisation
- Verification status
- Confidentiality status

22. VERSION CONTROL

The platform must maintain version control.

If a manufacturer changes:

- Battery chemistry
- Capacity
- Cycle life
- Warranty
- Safety classification
- LCOS
- Manufacturing location
- Product configuration

the platform should create a new version or trigger an ABTS review as appropriate.

Previous versions must remain in the historical database.

This is particularly important because the physical label may remain on a battery for many years.

23. MEMBERSHIP PLATFORM

Following the initial digital label platform, the system should be expandable into an ABTS membership platform.

The website should therefore be designed from the beginning to support:

- ABTS members

- Manufacturer members
- OEM members
- Distributor members
- Installer members
- Testing laboratory members
- Industry partners
- Government or institutional members
- Professional members

The membership system should support:

- Member registration
- Membership applications
- Membership approval
- Membership categories
- Annual membership fees
- Recurring payments
- Invoices
- Payment history
- Membership expiry
- Renewal
- Member profiles
- Member directories
- Member-only content

24. MEMBERSHIP REVENUE MODEL

The platform should be capable of supporting future revenue streams including:

Membership Fees

Annual or other approved membership periods.

Product Registration Fees

Fees associated with registering battery products.

ABTS Label Fees

Fees associated with certification or label issuance.

Verification Services

Fees for technical verification or additional services.

Enterprise Membership

Higher-level membership packages for major manufacturers, OEMs and industry organisations.

International Membership

Jurisdiction-specific membership structures.

The payment infrastructure should therefore be capable of supporting multiple products and fee structures.

25. PAYMENT PLATFORM

The developer should design the membership architecture so that a recognised payment gateway can be integrated.

Potential requirements include:

- Credit card payments
- Recurring payments
- Invoices
- Receipts
- Subscription management
- Payment status
- Refund management
- Membership renewal reminders

The final payment gateway should be selected based on Australian business requirements, security and international expansion.

26. API AND OEM INTEGRATION

The platform should be API ready.

In the future, a major OEM should not need to manually enter every battery into the ABTS platform.

The OEM should be able to connect its enterprise system directly to ABTS.

Potential API functionality:

- Create manufacturer
- Create product
- Submit product data
- Submit technical documents
- Request ABTS review
- Retrieve ABTS Reference Number
- Retrieve approval status
- Generate label

- Retrieve QR code
- Retrieve digital label
- Retrieve certification status

27. INTERNATIONAL API ARCHITECTURE

The API should support jurisdiction selection.

For example:

POST /products

with a jurisdiction or standard parameter.

Potential structure:

ABTS-AU

Australian standard.

ABTS-US

United States standard.

The same OEM could therefore eventually submit products for multiple markets through one technical integration.

28. ADMINISTRATION DASHBOARD

ABTS administrators require a central dashboard.

The dashboard should display:

- Registered manufacturers
- Registered products
- Applications
- Products awaiting review
- Approved products
- Rejected products
- Labels issued
- Label versions
- QR scans
- Membership status
- Membership revenue
- Product registration revenue
- Expiring certifications
- Documents requiring review

29. SEARCHABLE BATTERY DATABASE

The platform should eventually provide a searchable public database.

Users should be able to search:

- Manufacturer
- Model
- Chemistry
- Capacity
- ABTS Reference Number
- Country
- Certification status
- Standard
- Product category

This will become an important public transparency function.

30. INTERNATIONAL DATABASE

The database should ultimately allow a battery to have multiple jurisdictional records.

For example:

Battery Model X

ABTS-AU

ABTS-US

ABTS-Europe

The underlying product information may be shared where appropriate, while jurisdiction-specific compliance information remains separately controlled.

31. DATA OWNERSHIP

The developer must clearly identify ownership of:

- ABTS platform
- ABTS database
- Product data
- Manufacturer data
- Certification records
- ABTS Reference Numbers
- QR records
- Digital labels
- Audit records
- Membership data

ABTS must retain control over its certification database, identification system and digital records.

The developer must not commercialise or reuse ABTS data without written authorisation.

32. CYBER SECURITY

The platform must include appropriate security measures including:

- Secure authentication
- Role-based permissions
- Encrypted data transmission
- Secure document storage
- Database protection
- Automated backups
- Audit logging
- Account management
- Password protection
- Two-factor authentication where appropriate
- Disaster recovery

The developer should provide a documented security architecture.

33. WEBSITE AND PLATFORM DESIGN

The existing ABTS website should become the public-facing front end of the platform.

The design should clearly separate:

Public Website

Information about ABTS.

Verification

Search and QR verification.

Manufacturer Portal

Battery registration and label generation.

Membership

Membership registration and payment.

Administration

ABTS management.

Future International Standards

Jurisdiction selection.

34. TECHNOLOGY AND SCALABILITY

The developer should recommend a technology stack that supports:

- High reliability

- Security
- API integration
- Database scalability
- International expansion
- Payment integration
- Document storage
- Dynamic PDF generation
- QR generation
- User management
- Mobile access

The system should not be built around a collection of unrelated plugins that would make future development difficult.

The developer must explain:

- Technology stack
- Hosting
- Database
- Backup architecture
- API architecture
- Security
- Maintenance requirements
- Estimated operating cost

35. INTELLECTUAL PROPERTY

ABTS should own or have perpetual commercial rights to the custom platform developed specifically for ABTS.

This includes:

- Custom database architecture
- Label generation functionality
- ABTS Reference Number system
- QR architecture
- Digital verification system
- API integrations
- Custom workflows
- Custom interfaces
- ABTS-specific software

The developer must identify all third-party software, plugins and licences.

36. DEVELOPMENT PHASES

PHASE 1

ABTS Digital Foundation

- Website integration
- Database
- User management
- Manufacturer accounts
- Affiliate accounts
- Product registration
- Technical data fields
- Document management

PHASE 2

ABTS Verification

- Submission workflow
- ABTS review
- Approval process
- ABTS Reference Number
- Audit trail
- Version control

PHASE 3

Digital Label

- Dynamic label generator
- Static and variable data
- QR code
- Digital verification page
- PDF export
- SVG export
- Production artwork

PHASE 4

OEM Integration

- Variable data export
- CSV
- XLSX
- API
- OEM integration
- Printing workflow
- First Article process

PHASE 5

Membership

- Member registration
- Membership categories
- Fees
- Payments
- Recurring memberships
- Member dashboard
- Member directory

PHASE 6

International Expansion

- Jurisdiction architecture
- ABTS-US
- Additional standards
- International currencies
- International membership
- International product certification

37. INITIAL OEM LABEL PRODUCTION PACKAGE

For each approved battery product, the platform should ultimately be capable of producing a package containing:

1. Master Artwork

- Vector artwork
- Static layer
- Variable layer
- Correct dimensions
- ABTS branding

2. Variable Data File

CSV or XLSX containing:

- ABTS Reference Number
- Product information
- Technical metrics
- QR URL
- Other approved fields

3. QR Code

Unique production-ready QR code.

4. Print-Ready PDF

Correct dimensions and resolution.

5. Digital Label

For use on:

- Website
- Product documentation
- Commercial invoices
- Digital product information
- Government or incentive databases where applicable

6. Technical Specification

Containing:

- Label dimensions
- Material
- Adhesive
- Lamination
- Colour requirements
- Printing requirements
- QR requirements
- Durability requirements

38. OEM FIRST ARTICLE INSPECTION

The manufacturer should be instructed to produce a first article sample before production approval.

Minimum requirements should include:

- Three physical samples
- Application to the actual battery enclosure
- Verification of adhesion
- Verification of print quality
- Verification of dimensions
- Verification of QR scanning
- Verification of colour
- Verification of variable data
- Verification of ABTS Reference Number

The OEM should provide photographs and confirmation before mass production.

39. BRAND COLOUR MANAGEMENT

The initial ABTS production artwork should include controlled brand colours.

The proposed production specification identifies:

Primary ABTS Green

Hex: #005F41

Pantone: 3425 C

and supporting colours including light green, dark charcoal, light grey and divider grey.

The final colour specifications should be confirmed and locked by ABTS before the production artwork is released.

40. TYPOGRAPHY

The initial artwork specification identifies:

- Inter
- Segoe UI
- Arial

as suitable sans-serif fonts.

The final production template should establish one approved font system.

Where the label is being supplied as production artwork, fonts should be embedded or converted to outlines as appropriate.

41. LABEL DIMENSIONS

The final ABTS physical label dimensions must be established before the production artwork is locked.

The initial concept contemplates a label approximately:

100 mm × 150 mm

However, the final dimension should be approved by ABTS based on the physical battery application and manufacturing requirements.

The platform must support configurable label dimensions so future jurisdictions or battery categories can use different formats.

42. LABEL STATUS

The digital record should clearly display the status of each label.

Examples:

DRAFT

SUBMITTED

UNDER REVIEW

CHANGES REQUIRED

APPROVED

CERTIFIED

EXPIRED

SUPERSEDED

WITHDRAWN

REVOKED

This status must be reflected on the digital verification page.

43. LONG-TERM DIGITAL RECORD

The platform must be designed on the assumption that a battery may remain in service for many years.

The digital record should therefore remain accessible for the expected life of the product.

If a manufacturer ceases trading, the ABTS record should remain available.

If a product is discontinued, its historical certification record should remain accessible.

If a label is superseded, the historical record should not be deleted.

44. FUTURE COMMERCIAL MODEL

The platform should be capable of becoming a commercially sustainable ABTS ecosystem.

Potential revenue streams include:

- Annual membership
- Manufacturer membership
- OEM membership

- Product registration
- Certification
- Label issuance
- Digital verification
- Technical assessment
- API access
- Enterprise accounts
- International licensing
- Training
- Accreditation
- Data services

The initial development should therefore establish the technical foundation for these future commercial services without unnecessarily complicating the first release.

45. KEY SUCCESS CRITERIA

The project will be considered successful when an authorised battery manufacturer can:

1. Log into the ABTS platform.
2. Register its company.
3. Register a battery model.
4. Enter all required technical information.
5. Upload supporting documentation.
6. Submit the product to ABTS.
7. Receive ABTS approval.
8. Receive a unique ABTS Reference Number.
9. Generate an approved digital label.
10. Generate the unique QR code.
11. Download print-ready artwork.
12. Provide the artwork and variable data to its production facility.
13. Print the label onto the battery or battery enclosure.
14. Apply the physical label.
15. Scan the QR code using a mobile phone.
16. Access the correct ABTS digital battery record.
17. Verify the battery's ABTS status and technical information.

This is the core functionality that should drive the initial development.

46. FINAL DEVELOPMENT PRINCIPLE

The objective is not simply to create an ABTS website.

The objective is to create a **digital battery identity and transparency infrastructure**.

The physical ABTS label is the visible component.

The real value sits behind the label:

Battery

→ **ABTS Reference**

→ **Verified Data**

→ **Technical Evidence**

→ **Digital Record**

→ **QR Verification**

→ **Lifetime Traceability**

The platform should be built so that this infrastructure can begin in Australia, expand to the United States and other jurisdictions, support OEM and manufacturer integration, and ultimately develop into a global battery transparency and membership ecosystem.

47. REQUEST FOR DEVELOPER QUOTATION

The developer should provide a formal proposal covering:

Development

- Initial development cost
- Phase 1 cost
- Phase 2 cost
- Phase 3 cost
- Future phase estimates

Technology

- Proposed technology stack
- Database
- Hosting
- API
- Security
- Document storage

Design

- Website design
- User interface
- Digital label design
- Mobile interface
- Public verification interface

Integration

- OEM integration
- API
- QR system
- Variable Data Printing workflow
- Payment gateway

Operations

- Hosting cost
- Maintenance
- Security updates
- Backups
- Technical support

Intellectual Property

- Ownership of source code
- Database ownership
- Licensing
- Third-party dependencies

Timeline

Provide estimated development time for:

- Initial platform
- Digital label system
- OEM integration
- Membership platform
- International expansion architecture

END STATE

The desired end state is a platform where an OEM battery manufacturer can receive an ABTS-approved digital label directly from the ABTS platform and use it within its existing manufacturing and Variable Data Printing process.

For example:

GREE registers battery

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ABTS verifies battery

↓

ABTS Reference Number issued

↓

Digital label generated

↓

QR code generated

↓

Production artwork generated

↓

GREE downloads artwork and variable data

↓

GREE prints ABTS label during manufacturing

↓

Label is physically applied to battery

↓

Battery is shipped to Australia

↓

Customer scans QR code

↓

ABTS digital record opens

↓

Customer verifies battery information and ABTS status

This should be the fundamental workflow around which the platform is designed.